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ABSTRACT

This final report is a practical document, specifying techniques and procedures found effective during a project to (1) demonstrate a model of appropriate vocational service for developmentally disabled adults and (2) provide technical assistance and training to community facilities serving these persons. Chapters 2-6 discuss model components: intake, vocational assessment, vocational adjustment, vocational training, and cooperative programing. Chapter 2, The Intake Process: Personal and Background Information, discusses assessment factors and functions. Chapter 3 describes the prescriptive vocational assessment approach used that focuses on three areas of client data: personal and background information, formal and informal tests and measurements; and work sample training to acquisition and production data. Work Adjustment (chapter 4) discusses the simulated high demand adjustment environment to teach job-appropriate behaviors. Chapter 5, Task Analysis, Training, and Supervision, describes steps taken to provide effective training and experiences in several sheltered facilities. Topics in chapters 6, 7, and 8 include a project-operated lawn service program, training for competitive employment, and counseling services. Chapter 9 presents the project-developed inservice program and model. And chapter 10 briefly discusses preparing the family for the developmentally disabled child's independence and training centers. (Appendixes are available separately. See Note.) (YLB)

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VOCATIONAL SERVICES EXPANSION PROJECT

End-of-Project-Report

1975-1978

VOLUME I

VOCATIONAL SERVICES COMPONENT

Institute for the Study of Mental Retardation and Related Disabilities

University of Michigan

Ann Arbor, Michigan

CE 024 904

U.S. DEPARTMENT OF HEALTH
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Kevin P. Lynch, Ph.D.
Ann Arbor

Autumn, 1978

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CHAPTER I

INTRODUCTION

A. PROJECT OBJECTIVES

The objectives of the Vocational Services Expansion Project of the Vocational Services Component were to (1) demonstrate a model of appropriate adult vocational service for developmentally disabled adults and (2) to provide technical assistance and training to community facilities serving adult developmentally disabled persons.

This grant was sought because the staff of the Vocational Services Component had noted, as a result of frequent contacts with the clients and staff of community work or activity programs, that many developmentally disabled persons residing in the community were confined in daily programs that were little more than warehousing operations. Programs were frequently offered in the most delapidated of buildings, often in places far from the community, by well-intentioned but largely untrained staff. In fact, most programs viewed by the staff could be characterized as children's programming offered to adults.

The Vocational Services Expansion Project proposed the development of the highest level of adult vocational service as a model of same and as a vehicle for staff training. Accordingly, the Project developed a model of intake, vocational assessment, vocational adjustment, vocational training, and cooperative programming with the Bureau of Vocational Rehabilitation and other community agencies concerned with the employment of severely handicapped citizens.

The project offered daily programming to a population of fifteen (15) developmentally disabled adults who had been declared "non-feasible" by traditional assessment procedures and who were currently placed in an adult activity program or who had no daily programming whatsoever. On the average clients functioned in the moderate range of intellectual functioning and only two (2) of 110 clients served during the three-year life of the project had work experience of more than six (6) months. The project focused heavily on successful work experience at tasks seldom associated with workers in the moderate to severe range and the documentation of the techniques and procedures that seemed to be effective in teaching complex vocational skills to lower functioning persons. The Vocational Services Expansion Project was not oriented toward ancillary adult activities such as recreation, social skills or related areas; however, the project did offer individual and group counseling services on topics related to work matters or to other events in the client's life that affected work performance. Additionally, the staff did use the highly reinforcing nature of the work environment to contingency contract for job-related behaviors (e.g., tooth brushing, shaving, appropriate work clothes). It must be emphasized again, however, that the staff of the Vocational Services Expansion Project were most interested in demonstrating that developmentally disabled adults need not have their days filled with trips to the zoo, endless instruction in basic academics, and continuous and excessive recreation which actually (in the opinion of the project staff) is filler for staff desperate for activities for their charges.

In meeting its second objective (technical assistance and training), the project staff maintained an active schedule of monthly training seminars, limited enrollment preceptorships, and field dissemination through local, state, and national presentations. Extensive contacts with service personnel from schools, adult activity centers, work activity centers, sheltered workshops, group homes, and advocacy operations has led the staff to conclude that one of the most pressing needs in the field of service to severely handicapped citizens is to disseminate existing research products and, subsequently, to assist agencies in implementation.

The Vocational Services Expansion Project end of project report is designed to be a practical document, specifying as clearly as possible those techniques and procedures which the staff found to be effective in elevating the vocational potential of the developmentally disabled citizen. Each section is authored by project staff responsible for that aspect of project activity. Chapter content attempts to present material in such a way as to facilitate replication and permit further research.

B. PROJECT ELEMENTS

In a recent survey (Lynch and Gerber, 1977) of Michigan's adult activity, work activity, and sheltered workshops found that more than 70% of both the adult and work activity center population functioned at the high severe to low-mild level of retardation (see Table 1). Despite the high functioning level of these clients the typical center offered very little vocational training or, subsequently, the opportunity to be vocationally productive (see Table 2). Such programs focus on daily offerings of recreation and diversions. Adults functioning at these levels should (1) be in these low level centers and (2) should be engaging in more normalizing daily activities commensurate with their abilities.

TABLE 1

IQ Range of Adult Activity, Activity Center, Work Activity Center, and Sheltered Workshop Clients

IQ	Adult Activity Center Clients	Work Activity Center Clients	Sheltered Workshop Clients
Over 80	—	.6	—
66-80	7.2%	15.2%	55.9%
50-65	22.3%	40.2%	23.1%
35-49	49.0%	31.0%	16.7%
20-34	12.2%	11.4%	2.9%
0-10	9.3%	1.6%	1.4%

TABLE 2

Programs for Adult Activity Centers, Work Activity Centers, and Sheltered Workshops

Program	Adult Activity Center	Work Activity Center	Sheltered Workshop
Recreation	11.5%	5.9%	—
Crafts	31.9%	49.3%	—
Contract Work	—	20.0%	100%
Community Survival Skills	48.3%	20.3%	—
Free Time	8.6%	4.5%	---

While there are multiple reasons why severely handicapped persons continued to be largely disenfranchised from mainstreaming vocational opportunities one of the central causes appears to be the maintenance of the widely held, yet largely erroneous notion that severely handicapped persons cannot be taught to work or are disinterested in work. In demonstrations over the past twenty years researchers and practitioners alike have shown that severely handicapped persons can be taught to approximate the productive capacity of non-handicapped workers when systematic training and supervision procedures are employed. The early work of Loos and Tizard (1955), Clarke and Heremelin (1955), Williams (1967), Crosson (1960, 1969), Gold and his Associates (1972, 1973, 1974), and Bellamy's extensive research on training and supervision variables (1977, 1978) should stand as sufficient evidence that severely handicapped individuals can work at tasks that, in the experimental and applied situation, are at levels of complexity far in excess of typical contractual work found in most of the country's sheltered workshops (Greenleigh, 1975; Lynch, 1976).

In addition to the problem of low community vocational expectation for severely handicapped persons there is also a lack of commercially available vocational assessment systems which can be used to prescribe vocational training procedures for severely handicapped individuals. Most systems (Singer-Graflex, Tower, JEVS, etc.) are predictive rather than prescriptive systems. These systems assess the skills that a client brings to the evaluation setting and, consequently, are likely to register a "false negative" concerning the person's vocational capacity (Lynch, 1978). Assessment procedures, similar to those suggested by Karan (1977) and Lynch (1978) need to be used when determining feasibility of lower functioning severely handicapped persons. Helen Mabarak and Barbara LeRoy will discuss the VSE assessment approach in the chapter dealing with that content.

If a severely handicapped person survives traditional vocational assessment, and most do not (Lynch, 1977), traditional work adjustment procedures may prove to be the next barrier to training. Most so-called work adjustment programs occur as part of an on-going sub-contract training activity under the theory that the work itself is therapeutic and that the work environment is also habilitative. Many lower functioning clients, however, have no concept of tool use, do not know how to work rapidly, and may not be able to distinguish between "work" and "play." When these clients become a barrier to contract completion (working too slowly, making assembly errors, etc.) the staff is often inclined to remove them from the assembly line or work station. As was noted in the Greenleigh Report (1975), most work-oriented facilities have difficulty sorting out production and rehabilitation responsibilities. Production (the need for shop economic survival) often is the priority.

Most lower functioning severely handicapped persons had little or no work experience nor a concept of themselves as workers. A work adjustment environment that is accepting and understanding is necessary, but not sufficient. The work adjustment staff must be prepared to actively teach vocational behaviors and to engineer the work environment free from the constraints of subcontract deadlines. Simulated high demand work adjustment environments have been found to be highly effective in teaching complex work behaviors to lower functioning workers. Kevin P. Lynch will discuss the VSE adjustment approach.

In addition to assessment and adjustment problems severely handicapped clients may encounter difficulty in surviving traditional vocational training procedures. Traditional training procedures, generally successful with higher functioning or physically handicapped clients, is generally verbal in nature and assumes that the client has the cognitive capacity to make complex stimulus discriminations with minimum cue information. Lower functioning severely handicapped workers, however, encounter difficulty in making stimulus discriminations (Zeamen and House, 1963) which results in their evidencing slower acquisition rates in learning. When lower functioning clients are referred for training and traditionally highly verbal training procedures are employed, training staff might construe the client difficulty as "lack of motivation" or "inability to learn." In fact, the client's problem is neither a lack of motivation no inability to learn but rather a problem associated with responding to an inappropriate training strategy. Susan Potter will fully examine the work skills training procedure developed by the VSE Project.

While the Vocational Services Expansion Project was primarily concerned with work skills and job-related behaviors, it became clear that the staff needed a mechanism to deal with trainee affective concerns. Clients often came to the training workshop upset over incidents that had occurred in the group home or in some other setting outside the Institute. To provide a forum for client concerns and to provide an opportunity for clients to share their feelings an individual and group counseling component was developed. The procedures employed in the counseling chapter are detailed by Dr. Jay Granat who developed and refined the counseling component of the VSE Project.

Within the next five years approximately 1,500,000 severely handicapped persons will be released from state institutions or will be graduating from mandated community-based school programs (Lynch, 1978). In all likelihood these individuals will not be returned to state institutions as that would constitute a massive violation of the principles of normalization and deinstitutionalization. Given that these citizens will be remaining in the community, it is clear that both providers and purchasers at the community, state, and national level will soon be called upon to provide quality services to lower functioning persons than heretofore encountered, using instructional strategy not previously employed, and to numbers of people which will strain the adult service delivery system to its limits. It is the sincere hope of the staff of the VSE Project that this document will be of practical value to practitioners concerned with the vocational education and habilitation of developmentally disabled citizens.

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CHAPTER II

THE INTAKE PROCESS: PERSONAL AND BACKGROUND INFORMATION

A. INTRODUCTION

Vocational habilitation of the severely handicapped who have a primary disability of mental retardation is a complex process. The severely disabled mentally retarded client presents many special needs that require lifelong services. The person's functioning in any one aspect of their life can affect their performance in other areas, thus, the vocational assessment must take into account the person's functioning and adjustment in many other areas in addition to those typically associated with work skills and abilities. The mentally retarded's vocational performance and success is influenced by a variety of factors in addition to cognitive motor skills. These influencing factors may be intrinsic to the person or a part of their external environment. The vocational assessment must identify the strengths and weaknesses that the client brings to the habilitation process and must also identify the supports and barriers that the person's external environment presents to the habilitation process.

B. INTAKE/REFERRAL PROCESS

Referrals were accepted from public and private agencies, professionals, and private individuals. Agencies that referred clients to the VSE included the State Bureau of Rehabilitation, school districts, community mental health development center, and the Department of Social Services. While other referrals were made by parents, guardians, and doctors. Referrals were directed to the intake coordinator or the vocational assessor.

The District Bureau of Rehabilitation Office and the VSE formed a cooperative working relationship to facilitate the intake process of clients served by both agencies. The relationship varied from client to client depending upon who initiated the referral, the type of service requested, and the level of client functioning. In general, the VSE intake coordinator and rehabilitation counselor assisted each other in gathering the necessary background information and client signatures by sharing evaluation reports, previous records, etc. In some cases the rehabilitation counselor and the VSE intake coordinator met jointly with the prospective client to explain the vocational habilitation process and their roles in the process. All VSE clients were referred to the Bureau of Rehabilitation with the exception of clients that were still eligible for services from the public schools. No clients were personally charged for vocational services through the VSE. In addition to working together during the intake phase, the rehabilitation counselor and VSE staff maintained regular contact throughout the client's program to help develop the habilitation plan, to secure supportive services such as speech therapy, and to help place the client in a job.

When the referral was first received, the intake coordinator contacted the referral source to determine the appropriateness of the referral. This initial contact served to clarify the nature of the services requested and the client's primary presenting problem. At this time, the nature of the VSE's program was explained to the referral source and prospective client. In some cases where time and transportation permitted, arrangements were made for the client and their family to visit the workshop. Many clients had a limited understanding of the concept of work. The actual workshop visit and discussion with the intake coordinator helped the client to make a more informed decision about participating in the program. Efforts were also made to explain to the client the need to request records from previous service providers. If the request for service were appropriate and the client were included in the population to be served by the VSE, consent forms and record request forms were given the referral source and the process of gathering background information began.

The process of gathering background information included completing a standardized intake form, requesting records from past service providers, and interviewing the prospective client and their families as needed. The VSE developed an intake form designed to gather relevant information on an adult mentally retarded population (see Appendix 1). The intake coordinator was available to parents and others to assist in completing the intake form. Upon completion of forms and receipt of relevant records, the intake coordinator reviewed the information to determine areas in need of further clarification. The client's background information was then summarized into a pre-service summary report.

The intake coordinator, in conjunction with ISMRRD's Admitting and Disciplinary Assignment Committee, reviewed the information that had been gathered and summarized. They determined whether the client should be served by the VSE and ISMRRD and, if so, what specific services needed to be provided. The necessary evaluations and services were then scheduled.

C. FACTORS ASSESSED

The intake procedures gathered existing information about the client and his/her "client system." "Client System" refers to the many people and agencies that interact with the client and make up his/her immediate world. The intake was an identification of the client's present service needs, past functioning, and experience with service providers. This information was used to determine the appropriateness of the component's resources to meet the client's needs, and if accepted, to design and structure the assessment process. The intake gathered existing information and perceptions about factors intrinsic to the person which may be reassessed or further evaluated in the more formal assessment process. The intake also assessed those factors external to the client which can equally affect the client's vocational performance and which would not be focused on during the formal vocational assessment which focuses on the client as an individual.

The intake assessment gathered background information in the following areas:

1) family
2) social
3) residential
4) medical
5) educational
6) vocational
7) financial
8) legal
9) psychological

The client's family can be an invaluable source of support or if not involved a barrier to the habilitation process. It is important to remember that the client may be a member of an established family structure that will be affected by any changes the program makes with the client. Basic information about the family's perception of the client's abilities and potential was examined as well as their attitudes about the client's involvement in vocational habilitation and possible employment. The intake attempted to determine whether they were supportive or nonsupportive of this.

The client's social adjustment was another area examined. Questions such as: What are the client's skills in interacting with people? Is he able to use public transportation? Does he have basic self-care skills? What is the client's adjustment to his present situation and disability? Does the client have any behavioral problems? In what leisure activities does the client engage? are addressed. Basic knowledge about the client's style of relating to his social environment and his ability to move about in it is important to ascertain.

Information about the client's present and past residential placement was also gathered. Again, questions utilized to obtain this information were: Where does the client live? Does he live with his family, in a group home, a foster care placement, etc.? Who is responsible for maintaining the residence? How many people make up the household? How does the client relate to other people in the residence? What are the house arrangements for transportation?

What latitude is the client given in leaving and entering the house? In addition to this information about the client's residential placement, background information from past residential placements was also useful. If the client has been previously institutionalized, institutional records may provide insight into the client's previous work experience, social adjustment, habilitation program, recurrent problems, etc. The rules, daily routine, location, and structure of the client's residential placement can affect the client's ability to participate in program activities and employment situation.

Background information about the client's education history is very important. What types of educational programs has the client received? What type of progress did the client make in the programs? What were the client's areas of success or failure? What recommendations do they have for future programming and methods that are productive in working with the client? Information from present and previous educational placements provided useful insight into how to work with the client, their academic performance, and areas of need.

Similar information about the client's vocational programming and experience was also useful. What types of vocational training or evaluation programs had the client received? What progress did the client make in these programs? What were their impressions of the client's progress and areas of strengths or weakness? What recommendations do they have for future programming? The client's employment history is also important to explore. Has he previously been employed? What was the nature of the work? Why is he now seeking services from this agency, and why was his employment terminated? This information is useful in determining vocational goals and how best to help the client achieve them.

Psychological records also helped to answer the same questions. Useful psychological reports identified perceptual problems, level of cognitive functioning, emotional difficulties, etc. This information, in conjunction with the vocational evaluation results, was useful in prescribing teaching/training strategies that were effective with that particular client. In addition to this, psychological evaluations assigned labels and intelligence scores to clients which were needed for agency records.

Medical histories of the client were also collected. The severely handicapped present many special medical needs and may not have received regular or appropriate medical and dental care. Medical issues which need to be addressed include: Does the client have any physical problems which will limit his ability to work? If yes, what are they? Does the client have a seizure disorder, which is a common problem for many developmentally disabled individuals? Is he under medication? Is the client medically authorized to work? What was the date of the client's last medical and dental examinations? This medical background helped to identify physical limitations the person had in relation to vocational activity and possibly a need for updated care. Such information also made the training staff aware of special emergency precautions to be taken with the client.

Clarification of the client's legal status in regards to guardianship was also obtained. It was important to determine whether a guardian had been appointed for the client, and if so, what type of guardian had been assigned. This was necessary from the very beginning in obtaining consent for the client to participate in the program and signatures on records needed by the agency. Often times confusion existed on the part of the parents and the mentally retarded client as to whether the parents were the guardians of their mentally retarded offspring over the age of eighteen. It was important to clarify this in order to admit clients to the program and possibly to advocate for the client's rights to make certain decisions about his future.

A final area in which information was sought was the financial resources of the client. Many severely disabled clients were receiving federal financial support that limited the amount and type of income the recipient could receive. As clients engaged in work activties and were paid for their efforts, their government benefits could potentially be reduced or withheld. The VSE tried to determine what types of financial resources the client had, i.e., Supplemental Security Income, parental support, private trusts, etc., in order to monitor client earnings and insure the client had sufficient resources to care for his needs.

D. FUNCTIONS OF INTAKE ASSESSMENT

Background information through intake provided an overview of the client's present service needs and those people and organizations currently and formerly involved in meeting these needs. This information was then used in conjunction with information gathered in the remaining phases of the assessment process to make recommendations for future programming.

Background information in the many areas described was utilized by the vocational assessors as they structured the assessment process and developed recommendations for future program needs of the client. Parents, group home operators, schools, doctors, vocational programs and others who were involved with the client were valuable sources of information. They helped identify areas of success, problem areas, successful strategies of intervention, and particular concerns that they or the client had. Knowledge of previous program activities and evaluations that the client had received helped to avoid duplication of efforts and reduced the amount of examination and scrutinization to which the client was subjected and allowed the VSE assessors to build upon information and recommendations that had already been developed and to follow-up recommendations that were not implemented. Information from previous sources and the referral source helped assessors develop their assessment strategy and determine areas on which to focus.

After background information was gathered, the assessment process identifiedareas which required evaluations by disciplines other than vocational rehabilitation. Often times the severely mentally retarded client experienced difficulties in speech communication, neurological problems, motoric problems, etc. In these cases, evaluations by speech pathologists, physical therapists, psychologists, and others were needed. Outside consultations and evaluations added valuable information to assist in designing the overall habilitation program. The VSE vocational assessment utilized information from many discipline areas and was enhanced by an interdisciplinary assessment team. The need for these additional evaluations was identified during the intake assessment, if possible, and performed before the formal vocational assessment process was completed. These evaluations provided additional data to the vocational assessors which were then incorporated into the overall assessment reports and recommendations.

The gathering of background information and examination of past records also served the function of updating and consolidating the client's records. By consolidating background information into a summary report, a general overview of the client and detail information pertinent to the agency's needs was provided. This summary report made information about the client much more accessible and relevant. In the process of summarizing the case history, the records were also updated. Inappropriate labels were questioned and removed if appropriate recommendations in need of follow up were identified.

In the process of gathering background information from various organizations involved with the client, another important function of the VSE was served as these contacts served to develop a more formal working relationship with these people. It was important to maintain communication with these organizations as they were potentially involved in providing or supporting services that were identified as needed.

The nature of the client's involvement with these various people and organizations was also examined if possible. This helped to clarify the present agency's role and differentiate it from other parties involved with the client.

CHAPTER III

VOCATIONAL ASSESSMENT

A. LITERATURE REVIEW

Although vocational assessment for the mentally retarded client has gained considerable attention over the past few years, it has only begun to have an impact on the field of vocational rehabilitation. A review of the expanding literature on this subject indicates that the current status of vocational assessment for the retarded population is one that is not organized, not defined, and lacking in a systematic body of knowledge necessary to predict vocational activity (Brolin, 1976).

The recent attention given to the habilitation of the retarded client through the Rehabilitation Act of 1973 has forced vocational evaluators to consider special provisions for this population. These provisions for assessment of the mentally retarded are developing as an outgrowth of the general field of vocational assessment. Traditional vocational assessment involves a process of identifying relevant characteristics which demonstrate or predict a client's potential for vocational success. Such assessment typically utilizes tests designed to measure vocational potential, work samples, simulating real work situations and the analysis of medical, psychological, educational, familial and personal data deemed relevant to vocational adjustment.

Utilization of the "feasibility model" has traditionally been a determining factor in the selection of clients, following their vocational assessment, for vocational rehabilitation services. The feasibility model is based on an economic cost/benefit ratio necessitating that vocational assessment be predictive in nature. That is, selection of clients for rehabilitation services is determined by utilization of assessment measures aiming to predict who will succeed in vocational areas.

Currently, the status of vocational rehabilitation for the mentally retarded is determined by the traditional feasibility model. On the basis of lowperformance on traditional assessment measures, and the utilization of the feasibility model, most mentally retarded clients are declared non-feasible for vocational rehabilitation services (Abelson, 1976).

The recent success of many retarded clients in the area of acquiring complex assembly skills, despite so-called failure on traditional predictive assessment measures, has triggered considerable concern regarding vocational assessment for this population. Research demonstrates that typical vocational tests and systems are only serving to point out the lack of skills of the mentally retarded population (Timmerman, W., 1974; Wolfensberger, W., 1976; Neff, W., 1976; Wathall J. and Love, H., 1974).

As traditional vocational assessment methodology became viewed as inappropriate for the mentally handicapped population, specialized evaluation systems were developed. Aiming at the unique needs of the retarded or otherwise developmentally disabled client, these special systems are widely utilized. Evaluation systems, such as the TOWER, the JEVS (Jewish Employment and Vocational Service), the Hester, and the Singer-Graflex utilize work samples to assess potential vocational ability (Rosenberg, B., 1969; Materials Development Center, 1976). The target population for these systems are primarily the disadvantaged, the physically handicapped, and the mentally ill. Currently, two assessment systems developed for a mentally retarded population are the McCarron Dial Work Evaluation System (MDWES), and the Vocational Information and Evaluation Work Samples (VIEWS) (Material Development Center, 1976-77).

Although the development of vocational assessment systems for special populations represents an advancement in the field of vocational assessment, these systems are generally predictive in nature, still serving to declare a client feasible or non-feasible for vocational rehabilitation (Ableson, 1976).

Such systems assess the vocational potential a client demonstrates when he beginshis assessment, rather than the vocational potential that he can eventually attain.

As a result of the success apparently offered through specialized training methods, various alternatives to traditional "predictive" assessments are emerging on the vocational assessment scene. Abelson proposes that vocational evaluators "reject the cost/benefit ratio philosophy, reject the feasibility model, and redirect evaluation toward the goal of developing meaningful programs that will meet client needs on an individual basis so that no one who wants to work is excluded from work because he or she does not meet the standards of a cost/benefit system." Calling for a humane approach to the problem, Abelson suggests that while "thinking in terms of upgrading delivery services, we are just beginning to tap the potential of this population" (Abelson, 1976).

Bellamy and Snyder recommend another approach to the problems encountered in the assessment of the mentally handicapped. Realizing the lack of supportive relationships between available assessment measures and vocational success, they call for a practical approach to the problem, rather than to utilize feasibility measures. This practical approach involves attempts to predict the amount of training that a client might need in order to determine if appropriate treatment and training services are available. Bellamy and Snyder have developed the Training Performance Sample (TPS) as a method of predicting how much training a client will require (Bellamy and Snyder, 1975).

Believing that mentally handicapped individuals have only been categorized and limited by the results of assessment measures, Gold adds a varying viewpoint to the situation. He completely rejects testing for this population, recommending instead specialized training methods which insure success on the part of the trainee (Gold, 1974).

A movement away from predictive assessment is also shared by Crosson, who suggests that the assessment focus should be an attempt to find ways to train retarded people in order that they can effectively perform available work (Crosson, 1969). Elaborating on this suggestion, Karan states that the "primary purpose of evaluation should be to provide hints, suggestions, and guides for programming." Continued assessment is suggested to determine if treatment is effective (Karan, 1976).

The above review of the literature appears to indicate that the philosophy underlying assessment of the mentally retarded is changing from a predictive approach to one which attempts to define a client's characteristics in terms of how he can reach his vocational potential. Evaluators are viewing traditional vocational assessments which determine "who should work" as a limiting factor in vocational rehabilitation for the mentally retarded. The trend to assess the mentally retarded in order to determine how they can become successfully vocationally adjusted is emerging.

B. INTRODUCTION

The initial approach of the VSE vocational assessment was an attempt to move away from traditional "predictive" assessment for the mentally handicapped population to an assessment which would determine how a client could become vocationally successful. Stemming from the philosophy that with appropriate training, most mentally retarded clients could improve their vocational skills, and many of them could become successful workers, the VSE progressively utilized a prescriptive assessment approach. The prescriptive assessment developed into a process which focused on client strengths and weaknesses and learning style, in an attempt to develop a program for the client which would increase his vocational potential.

The vocational assessment methodology utilized by the VSE progressed considerably over the three years of the project. Initially, existing vocational tests and systems were utilized in order to obtain information considered relevant to vocational adjustment. Research relating to available vocational tests and systems indicated that most existing material was developed for clients functioning on a relatively high intellectual level, as compared to the clients served through the VSE. Available vocational assessment measures, in the majority of cases, were developed for populations such as injured industrial workers, the disadvantaged population, the emotionally impaired client, and the physically handicapped population.

At the onset of the VSE assessment program, the only vocational assessment system available which was developed for a mentally retarded population was the McCarron-Dial Work Evaluation System (MDWES). The MDWES utilized formal tests and a work sample task to vocationally assess mentally retarded clients. The MDWES was developed as a guide to determine a client's vocational potential. The system assesses five areas of client functioning: verbal-cognitive, sensory, motor, emotional, and integration-coping ability. A client is evaluated in these areas, in relation to his peers who are functioning on a sheltered workshop level. The MDWES attempts to predict a program level best suited to the client's vocational potential. These program levels include day care, work activity, sheltered workshop, and trans-community.

The VSE assessment program initially utilized the McCarron-Dial Work Evaluation System in addition to a variety of other tests designed to assess fine motor ability, thus having a bearing on ability to perform assembly skills. These tests include the Minnesota Rate of Manipulation Test, the Purdue Pegboard Test and the Bennet Hand Tool Test. The tests were administered to a group of fifteen clients who were the VSE initial assessment clients. In all cases, clients who were tested on these assessment measures performed extremely poorly, falling under the tenth percentile. In most cases, client scores fell below the first percentile. These tests were abandoned by the VSE assessment team on the basis of inappropriateness, as they only served to point out the lack of skills of the mentally handicapped population (see literature review).

The McCarron-Dial Work Evaluation System, utilized initially by the assessment team, served as a basis for the VSE assessment approach. The predictive nature of the MDWES was considered a disadvantage by the assessment team, however, the system provided a method of obtaining baseline data in the verbal-cognitive, sensory, motor, emotional, and integration-coping areas. As the tests used in conjunction with the MDWES were normed on a mentally retarded-sheltered workshop level population, they provided the most accurate assessment of a client's functioning in relation to his sheltered workshop peers.

In addition to the areas through the MDWES, the VSE assessment also included an assessment of client's functioning in academic areas and in areas of adaptive behavior. The work sample task utilized by the VSE initially was the Bendix R-2 Coaster Brake assembly. This sample task was chosen because of its complexity and the availability of data related to acquisition time on the part of mentally retarded clients. Subsequently, other work sample tasks were utilized in addition to the R-2 Coaster Brake (see work sample tasks).

The VSE prescriptive assessment focuses on three areas of client data: personal and background information, formal and informal tests and measurements, and work sample training to acquisition and production data. The value of the assessment lies in the utilization of the data obtained--that is, the assessor's ability to analyze the client's strength and weaknesses and to define an appropriate teaching/training strategy. See Appendix 2 for a model of client's assessment schedule.

C. FORMAL AND INFORMAL TESTS AND MEASUREMENTS

A variety of tests may be utilized in conjunction with the prescriptive assessment (See Appendix 3). The rationale for the utilization of tests is two-fold: (1) as a method of obtaining or verifying information of client's vocational strengths, weaknesses, learning style, and emotional adjustment for the purpose of obtaining a baseline of functioning in these areas and thereby, a basis for prescriptive programming; (2) as a basis for objective, consistent reporting to the vocational team involved with the client.

The value of the tests lies in the utilization of the test data for successful vocational programming. Appropriate utilization of tests during assessment can aid in determining what a client needs in relation to vocational adjustment and can have input into methods of meeting these needs. A test of receptive language, for example, may be of value in determining whether training procedures should rely on verbal cues.

Assessment objectives and strategies are unique to each individual client. These procedures are based on background and referral information and are determined prior to the assessment although modifications are made throughout the process. (See Sample Report and Referral Process).

Formal and informal measurements provide client data in the following areas: vocational motivation, interest and sophistication; cognitive-verbal functioning; sensori-motor ability; basic academics; social emotional adjustment; and adaptive behavior.

D. VOCATIONAL INTEREST, MOTIVATION, AND SOPHISTICATION

As motivation and interest are primary factors in the achievement of vocational success, prescriptive assessment in this area is essential. Three methods of obtaining relevant information are: 1) utilization of informal interviewing and background information; 2) "on-the-job" observation of client; and 3) formal tests.

An informal interview allows the client and evaluator to explore the client's knowledge and expectations about working through a conservational format. The VSE has designed a guideline of questions (Appendix 3) which we have found to aid in structuring the interview. During this interview process the client also has an opportunity to learn about the VSE assessment approach and what skills and knowledge he can expect to gain from this experience.

In order to supplement the interview and background information, as well as for cases involving the non-verbal client or the client who lacks vocational experience, observation of the client or the client who lacks vocational experience, observaation of the client during sample work acquisition and production is essential. During this time, the assessor is observing such factors as: attending skills, promptness in beginning work, client's willingness to follow rules and relate to supervision, indications of interest and enjoyment of work, and reinforcement needs (See Work Sample Section).

Although a few formal measures are available which purport to measure the vocational interest and sophistication level of the mentally handicapped, the authors conclude that use of such tests generally demonstrate a lack of vocational experience and knowledge on the part of the client. Clients generally respond on an experiential basis, that is, they demonstrate a preference for work in which they have previously engaged. For clients functioning on a borderline level, the authors have found that interest tests generally corroborate the client's stated vocational preference.

In cases where lack of vocational motivation and interest is observed, the value of the prescriptive assessment lies in the utilization and evaluation of techniques to increase motivation. Thus, the assessor is attempting to define methods to increase motivation (i.e., use of reinforcements, counseling, varying work tasks).

E. VERBAL-COGNITIVE

A full psychological evaluation is administered by a qualified psychologist as part of the vocational assessment, as both personal adjustment data and intellectual functioning data are necessary for support from Vocational Rehabilitation Services.

For the vocational assessor, psychological data can aid in structuring an assessment. Rather than using psychological data as a predictor of vocational success, such information may be used in conjunction with other data to alleviate difficulties, focus on strengths, and define learning style. For example, limited functioning may indicate the need for task analysis of work sample tasks. Psychological information can demonstrate methods of trainer intervention, such as utilizing verbal cues or modeling techniques. When a client has limited intellectual functioning determining his strengths may prevent failure.

A psychological evaluation may also give insight into a client's emotional adjustment. The vocational assessor, through such information, attempts to determine how a client can cope with his adjustment difficulties in a work situation. Utilization of techniques such as behavioral modification, counseling, and setting definite limits may help the client learn compensations for his emotional limitations.

In order to assess receptive language ability, both formal and informal measures were utilized. In some cases, clients were referred to a speech pathologist for a complete expressive and receptive language evaluation. Generally, however, receptive language evaluation was accomplished in conjunction with the vocational assessment. The Peabody Picture Vocabulary Test was utilized in order to obtain a formal measure of receptive language ability. The test measures the ability to associate a vocalized word with a pictorial representation of the word. An age-equivalent score is provided indicating how a client functions in the receptive language area in relation to his peers.

Informally, receptive language is assessed, as part of the vocational assessment, through observation of client's ability to utilize verbal cues, follow directions, and retain verbal information.

F. MOTOR-SENSORY FUNCTIONING

The following areas of motor-sensory functioning were assessed as part of the vocational assessment; vision screening and color blind testing, auditory screening, perceptual-motor functioning, tactile discrimination ability and fine and gross motor ability.

The local health department administered vision screening when a need was indicated or a client's vision ability was unknown. Referrals were made to a local ophthalmologist if neccessary. The Dvorine Color Plates were utilized in order to assess for color blindness.

Auditory screening was administered if a need was indicated through the Institute's audiological department. In a few cases, evaluation of auditory perception ability was also accomplished through the audiological department. Service was rendered or appropriate referrals were made on the basis of the auditory screenings.

In order to assess perceptual-motor functioning, the Bender Visual Motor Gestalt Test (BVMGT) was utilized. Generally administered in relation to psychological evaluation, the BVMGT measures integration of perceptual and motor processes. When a need was indicated, further assessment of perceptual-motor functioning was administered as part of the psychological evaluation.

Assessment of perceptual-motor ability was also accomplished through observation of a client's ability to accomplish informal tasks. The work sample tasks provided opportunity for evaluators to observe factors such as eye-hand coordination, ability to sequentially follow motoric processes, and perceptual discrimination ability.

Tactile discrimination was assessed through administration of the Haptic Visual Discrimination Test. This test involves the manipulation of objects in the hand to discriminate their particular shape, size, texture, and spatial arrangements, and to form an accurate mental representation of the object. The developers of the test state that it is an assessment of the neurological integration of tactual and visual discrimination processes (McCarron, L.; Dial, J., 1975).

Traditional motoric assessment for the severely handicapped client has included the use of tests such as the Purdue Pegboard and the Minnesota Rate of Manipulation. Such tests, standardized on a normal population. The McCarron Assessment of Neuromuscular Development (MAND) provides norms for a mentally handicapped population. The MAND profile of motor skills can be utilized to obtain information on the individual's relative strengths and weaknesses in varius psychomotor skills (i.e., dexterity, hand preference, gross motor).

Obtaining baseline data of a client's sensori-motor functioning can indicate strengths and weakness in these areas for later prescriptive programming. The authors feel that through experience and specialized training methods, many motor and sensory difficulties can be compensated for in a work situation.

G. BASIC ACADEMICS

A thorough assessment of basic academic skills was accomplished in conjunction with the vocational assessment. As client skills in academic areas varied from a pre-academic-readiness level to a sixth grade level, a variety of assessment measures were utilized. Formal reading tests utilized were the Woodcock Reading Mastery Tests, the Wide Range Achievement Test, and Peabody Individual Achievement Test. In order to assess mathematical ability, the Key Math Diagnostic Arithmetic Test was utilized, as well as the Wide Range

Achievement Test and the Peabody Individual Achievement Test. In some instances, the General Information Subtest of the Peabody Individual Achievement Test was administered.

Basic academic assessment also consisted of utilizing informal measures to obtain baseline functioning in academic-functional skill areas which may enhance vocational potential such as telling time, money handling, counting, basic reading, and measurement skills. Analysis of such skills in relation to potential work is the main goal of the assessment. The prescriptive value of the assessment lies in obtaining data in relation to the client's ability to learn and utilize academic skills required for a particular task. For example, can a client sign his name on a paycheck, how can we help him to do so?

H. BEHAVIORAL SOCIAL-EMOTIONAL/WORK HABITS

Three methods of obtaining information regarding a client's social-emotional behavior as related to work adjustment have been utilized by the authors. Initially, a review of background information may supply data such as relationship to peers; home and family relations, self-concept factors and previous vocational behavior.

Another measure of social emotional adjustment is obtained from formalized testing procedures. Data obtained for psychological evaluation as well as the utilization of information from rating scales can supplement background information.

Heavy emphasis is placed on the behavioral information obtained from observation during situational assessment. At this point the prescriptive assessment is concerned with: 1) obtaining baseline data related to on-the-job behavior, 2) utilizing the baseline data to define strengths and needs, 3) prescribing techniques which will encourage appropriate adjustment. For example, during the assessment, attempts to influence appropriate on-the-job behavior are tried by the assessor. Methods such as structuring the work space, isolating, positively reinforcing the client, modeling appropriate work behavior and verbal feedback are utilized. The assessor is attempting to determine the most effective techniques for the client.

I. ADAPTIVE BEHAVIOR

Observation of clients during simulated work and unstructured time, background information, and administration of the AAMD Adaptive Behavior Scale are utilized to assess client's adaptive behavior. As clients' functioning in areas such as self care skills, utilizing transportation, purchasing items, social behavior, and so forth may enhance their vocational potential, baseline data in such areas is obtained. In conjunction with the prescriptive assessment, the assessor attempts to determine how a client can obtain skills in this area. Both general skills and skills related to a specific vocational opportunity are considered.

J. WORK SAMPLE TRAINING AND PRODUCTION

During the conceptualization of the Vocational Services Component, a work sample which was both complex and easily adapted to a simulated production milieu was deemed important and necessary. The 14-piece Bendix R-2 coaster brake was used because of the data base, task analysis procedures and research provided by M. Gold (1972).

K. PROTOTYPE TRAINING AND PRODUCTION MODEL

During the training phase, the client worked from a training board in an isolated room, one-to-one with the trainer. Trials were timed and errors were coded according to manipulation, discrimination, and order (See Case Studies For Example Of Completed Coding Form). Manipulation is an error in which the client does something motorically which is either inconsistent or contrary to the way it has been taught. This type of error requires physical intervention by the trainer for correction. Discrimination is an error in which the client fails to attend to an appropriate cue. Intervention in this case is usually verbal (e.g., "Try another way"). Order is an error in sequencing. Intervention requires physical prompting on the part of the trainer. We trained to a criterion of 6/8 errorless trials.[1] The first 15 clients to complete the VSE assessment were trained under a low verbal methodology.

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[1] See Potter, S.B. "Training" for extensive details on these procedures.

After the client reached task acquisition criterion, 5 speed trials were completed to ascertain a baseline on the client's production rate following acquisition. Again, the speed trials were carried out in the training room. Following training and speed trials, the client was transferred to the workshop setting, where he produced the bicycle brake assembly with four other co-workers. The task was assembled from a standardized bin set-up with completed assemblies being placed in an adjacent board. Transfer was considered complete when the client produced two errorless assemblies from the bins. Order errors were the main errors present during transfer.

Immediately following transfer to the bin arrangement, five hours of simulated production began. A supervisor was present in the shop at all times, though little one-to-one intervention was carried out. Assembled brakes were taken to an adjacent room for production tally, error coding, and disassembly. The supervision kept a log of clinical observations on client behavior in the production setting. At the end of the production sequence, the supervisor completed the Observational Emotional Inventory (OEI) as a systematic method of recording client behavior.

After the first 15 clients completed the VSE assessment procedures, a re-evaluation of those methodologies was undertaken. At that time, 3 shortcomings were apparent: 1) low verbal training was not effective for all clients; 2) a 5-hour production period limited the collection of comprehensive data on client work performance; and 3) supervisory strategies during the production phase needed more structure and documentation. A 10-hour training cycle evolved to fulfill the acknowledge limitations in the prototype system.

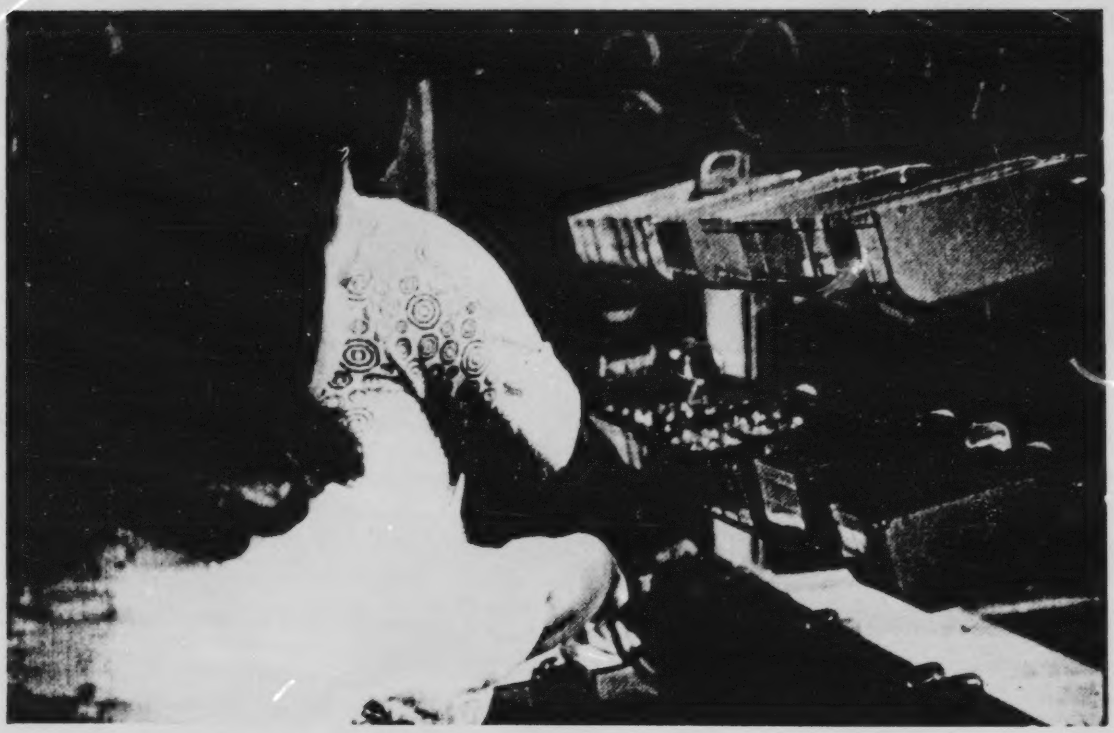
L. TEN-HOUR TRAINING CYCLE

The 10-hour training cycle is divided into three components: 1) two hours of training (task acquisition); 2) four hours of speed trials (production); and 3) four hours of faded supervision (production). As in the previous methodology, the first third of the cycle takes place in isolation while the remaining two-thirds take place within a simulated sheltered workshop environment. Training followed previously defined methods with the addition of non-standardized verbal cuing to assist the client in making appropriate manipulations and discriminations.

M. SPEED TRIALS

The 5 speed trials following task acquisition were expanded from the initial methodology to a 4-hour period of production with intense 1-to-1 client/evaluator intervention. Since the trials follow task acquisition having an extended speed trial period within the production setting seemed more reasonable. Additional structure was added by defining the client goals and trainer/evaluator methodologies used to help the client attain those goals.

The qualitative goal of speed trials is to have the client produce as rapidly as possible, by not allowing to occur or by extinguishing, when necessary, those behaviors which are inconsistent with rapid production. For example, a client who is looking at his co-workers while attempting to assemble the bicycle brake (BB) will not be able to produce at his top speed. The quanitative goal is a production rate of 26 bicycle brakes per hour which is the sheltered workshop rate; 52 bicycle brakes per hour being the industrial production rate. This numerical goal is in no way meant to either limit the rapid producer or penalize the slow producer. A client who moves from a production rate of 9 BB/hour to 13/BBhour during speed trials is demonstrating as much improvement as one who moves from 20 BB/hour to 26/hour. The trainer uses various techniques to increase the client's production rate, as well as to teach him appropriate work-related behaviors. Techniques utilized are modeling, chaining, priming, goal setting, and such mechanical interventions as a timer and monetary rewards. Precise data is recorded on methods used, results obtained, the environmental variables and influences, and the client's reaction to the training strategies and environment (See Appendix 5).



Once the client is producing rapidly with appropriate on-task behavior, it becomes important to ascertain data on how the same client will function in a more realistic environment of less supervisory intervention. The 4 hours of faded supervision speak to this need.

N. FADED SUPERVISION

During this phase of the cycle, the trainer removes himself at a consistent pace from immediate and constant intervention with the client. The objective of this phase of the cycle is to determine the reinforcement schedule which is necessary to either increase and/or maintain the client's current production rate. Ideally, reinforcement would be faded to a realistic minimum of once per hour. Reinforcement is only given when the client is attending to his task. Some reinforcement may be given to other co-workers in an attempt to draw the client back on task, if this becomes a problem. Only positive reinforcement (verbal or pat on the back) is given for good work-related behaviors.

Data, during this phase, is collected via 3 instruments: 1) VSE production and on-task behavior forms (See Appendix 1); 2) the previously mentioned OEI; and 3) clinical observation. The project has found that production rates tend to increase at this point due to a number of factors: 1) familiarity with the task; 2) familiarity with supervisory expectations; 3) comfort in the work setting and 4) fading of constant trainer intervention.

After working with the 10-hour cycle for several months, another re-evaluation of the assessment methodologies was undertaken. At that time, two further limitations were noted: 1) lack of other work samples and 2) lack of an environmental assessment which would address the client's reaction to work frustrations and varying supervisory styles. Both of these needs are incorporated into the current assessment system.

O. ADDITONAL WORK SAMPLES

Following completion of the 10-hour training cycle, the client is trained, using the same previously described training procedures (task analysis, one-to-one, modeling, error criterion), on two other work samples. Work samples currently being used in the assessment process are: 1) a gross tool used task requiring the tool manipulation of screws, bolts, nuts, and washers; 2) an electronic circuit board assembly, requiring the stuffing of integrated circuits and resistors; 3) a faucet assembly; and 4) janitorial/custodial tasks requiring adherence to standardized institutional cleaning procedures. Various other work samples have been utilized on a temporary basis as they became available to the workshop through contractual arrangements. Which work samples are utilized for further training depends on client interest and demonstrated abilities on formal tests and the BB assembly. For example a client demonstrating excellent fine motor abilities would, with his consent and interest, be trained on the electronic circuit board assembly. Conversely, a client with good gross motor abilities may do well on larger tasks such as those available in the janitorial area. Although the client is trained to strict criterion on these tasks, he is only placed in a limited, 2 hour, production period, unlike the eight hour period on the bicycle brake.

P. ENVIRONMENTAL ASSESSMENT

Subsequent to completion of the 10-hour training cycle and acquisition training on two other work samples, the client is placed in a contrived environment to assess his frustration tolerance, ability to switch tasks, and other job-related behaviors. On the 4th day when the client returns from lunch, 3 tasks are set up (e.g., BB assembly, faucet assmebly and electronic circuit board) and he is told he needs to finish at least one by the end of the day. Data are collected on his decision making, elapsed time in beginning to work, as well as his reactions to the environment (See Appendix 5). In the course of his production, he is asked to switch tasks to further assess his reaction to supervisory instructions and the inherent frustration involved in not completing the first task. A third environmental blockage is a parts run-out. Again, the evaluator is observing the client's reaction, ability to make a judgement and frustration tolerance. Finally, the client is subjected to firm and negative supervisory styles to observe his work behaviors under such duress. At the end of the environmental assessment, the client is allowed to finish his task with positive, supportive reinforcement on the part of the evaluator/supervisor.

The environmental assessment is an attempt to observe a client's functioning and adaptational skills under various work frustrations and supervisory interventions. Since the experience may prove extremely frustrating for the client, allowing him to feel the success and satisfaction of completing a task is essential. The client should leave the assessment with a heightened confidence in his strengths and abilities. The entire assessment process culminates in an exit interview. At this time, the client informally talks with the evaluator about his experience. Work motivation, vocational interests, and the client's reaction to the assessment process are discussed. The client should leave the assessment with the knowledge, through a concrete experience, that he can be taught a work task and what that work means to him.

Q. IMPLICATIONS FOR ASSESSMENT

From the 10-hour training cycle, work sample training, and environmental assessment, the evaluator is able to incorporate into the habilitation prescription specific information on the client's task acquisition, reaction to training, and training strategies, the client's learning style, types of probable errors and their successful compensations, necessary reinforcement schedule, and successful reinforcements strategies, the client's reaction to supervision, his reaction to the work setting, his co-workers, and other work related behaviors (e.g., ability to follow directions, ability to switch tasks on demand, ability to make a decision). This type of information gives a trainer or workshop supervisor a concrete picture of his client. Methodologies for training have been tested and the client has already learned what is expected of him as a worker. Further, data collected by the VSE have determined that once the client has learned the manipulations involved in doing a benchwork assembly, his acquisition time on subsequent benchwork tasks is significantly reduced.

R. GOALS AND OBJECTIVES

During the assessment the assessor attempts to look at many variables which influence behavior related to vocational adjustment in order to plan an intervention program. An essential component of the prescriptive assessment is the formulation of goals based on the assessment data.

Three factors are considered during the process of formulating goals:

1. Client's vocational strengths, needs, learning style, as determined through the assessment. For example, if a client lacks appropriate attending skills, a goal may involve attempts to increase attention span (i.e., goal-client will increase his attention span. Behavioral objective: client will work for 15 minutes without stopping. Strategy: utilizing timer, instruct client to work without stopping until buzzer sounds. Gradual increase of production may be necessary.).
2. Client involvement in the process of formulating goals. The rationale for client involvement is that the client should be an active participant in his habilitation process. Consideration of such factors as: feeling successful while learning skills and client vocational interests following the assessment, are important in the consideration of long term goals for the client. (As many low functioning and non-verbal clients cannot verbally express these factors, the assessor may attempt to utilize observation to obtain such data.)
3. Consideration of potential vocational placements for the client is important in the formulation of goals and objectives. An analysis of jobs available, and job descriptions can serve as a basis for realistic formulation of goals. Such factors as: necessary reading skills, transportation, necessary independent working skills, and so forth.

Following the assessment, a formal report is written which analyzes assessment data. The client's vocational strengths, limitations, and general vocational profile are presented. A prescriptive plan based on the vocational profile is formulated (See Sample Vocational Assessment Report) Appendix 6. During a staff meeting of involved personnel, the prescriptive plan is discussed and a program for implementation of the plan is developed.

S. SUMMARY AND RECOMMENDATIONS

The value of a prescriptive vocational assessment approach was demonstrated over three years of the Vocational Services Expansion Project. In conjunction with efforts on the part of vocational trainers to "find" viable methods of reaching the severely handicapped client, the prescriptive assessment serves to define appropriate methods of facilitating vocational adjustment. In contrast to traditional assessment systems which attempt to determine who can be a successful worker, the prescriptive system is a positive attempt to encourage successful vocational habilitation. Many severely retarded clients who formerly were designated as non-feasible for vocational habilitation have an increased opportunity to become vocationally successful through a prescriptive vocational assessment.

Project staff involved with the assessment of clients concluded the project with the feeling that the prescriptive assessment was a viable approach to meeting current assessment needs in the field of vocational rehabilitation. As with most projects, the conclusion is only the beginning, and staff realize that continual development of the prescriptive assessment process is essential. The following recommendations are an outgrowth of the project and may serve to structure future vocational assessment plans:

1. Vocational assessment for the severely retarded client should be viewed as a process of identifying those parameters which will aid in successful vocational adjustment. In conjunction with this view, vocational tests and work samples should be utilized for the purpose of prescribing effective teaching/training techniques.

2. The vocational assessment should be ongoing, continually attempting to modify appropriate methods of vocational interventions.

3. A realization that more time may be needed for the assessment of a

severely handicapped client than for traditonal vocational assessments is required. To illustrate this point, many clients who initially appear to have poor fine motor ability can, given additional time, develop competitive motor skills through experience or learning compensatory techniques.

4. Changes in attitude on the part of staff and the public to allow the severely retarded more opportunity in vocational areas are necessary.

5. A wide variety of work samples is suggested to allow for optimum insight into client functioning and needs.

6. Presentations of work sample tasks should incorporate a task analysis approach to encourage success on the part of the trainee (See Chapter on Training Methods).

Age, Sex, Functioning Level of Clients Provided Comprehensive Vocational Evaluations

Client	Age	Sex	NDI	Functioning Level	Previous Work Experience
1	26	F	113	Moderate	No
2	30	M	105	Moderate	Yes
3	32	F	120	Moderate	No
4	34	F	54	Severe	No
5	27	M	79	Severe	No
6	31	F	79	Moderate	Yes
7	30	F	140	Moderate	No
8	33	F	109	Moderate	No
9	44	F	115	Moderate	No
10	40	M	86	Moderate	No
11	40	M	80	Moderate	No
12	30	F	61	Severe	No
13	35	M	124	Moderate	No
14	22	M	125	Mild	No
15	30	M	100	Moderate	Yes
16	29	M	123	Moderate	No
17	23	F	100	Moderate	Yes
18	34	F	90	Moderate	No
19	27	M	108	Moderate	Yes
20	38	M	137	Moderate	No
21	34	F	95	Moderate	No
22	45	F	100	Moderate	No
23	19	F	86	Moderate	No
24	23	M	89	Mild	Yes

Client	Age	Sex	NDI	Functioning Level	Previous Work Experience
25	37	M	84	Mild	Yes
26	36	M	91	Moderate	No
27	22	M	138	Moderate	Yes
28	22	M	94	Moderate	No
29	19	M	92	Moderate	No
30	36	F	114	Moderate	Yes
31	29	M	99	Moderate	Yes
32	47	F	84	Moderate	No
33	44	F	80	Moderate	Yes
34	49	F	86	Moderate	No
35	16	M	123	Mild (Hearing Impairment)	No
36	36	M	75	Moderate	No
37	26	F	80	Severe	No
38	56	M	113	Mild	Yes
39	25	M	122	Mild	No
40	24	M	85	Mild	Yes
41	28	F	83	Moderate	No
42	45	F	86	Mild	No
43	30	F	85	Moderate	No
44	26	M	85	*	No
45	36	M	75	Severe	No

TOTAL	45	(Males) 24	(Females) 21
Mean Age	32.1	Minimum 16	Maximum 56
Mean Yrs. Inst.	8.6	Minimum 0	Maximum 32
Mean IQ	53.5	Minimum 24	Maximum 89
Mean NDI	97.78	Minimum 54	Maximum 140

*unable to determine

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CHAPTER IV

WORK ADJUSTMENT

The Vocational Services Expansion Project had, as one of its objectives the design and dissemination of a model of vocational adjustment services to lower functioning developmentally disabled clients who had been declared "non-feasible" by traditional assessment/adjustment procedures. Adjustment services were considered necessary previous to specific vocational skill training as many clients referred to the Project had little or no work experience or had behaviors (identified through the assessment process) that would constitute a barrier to rapid task acquisition and subsequent production.

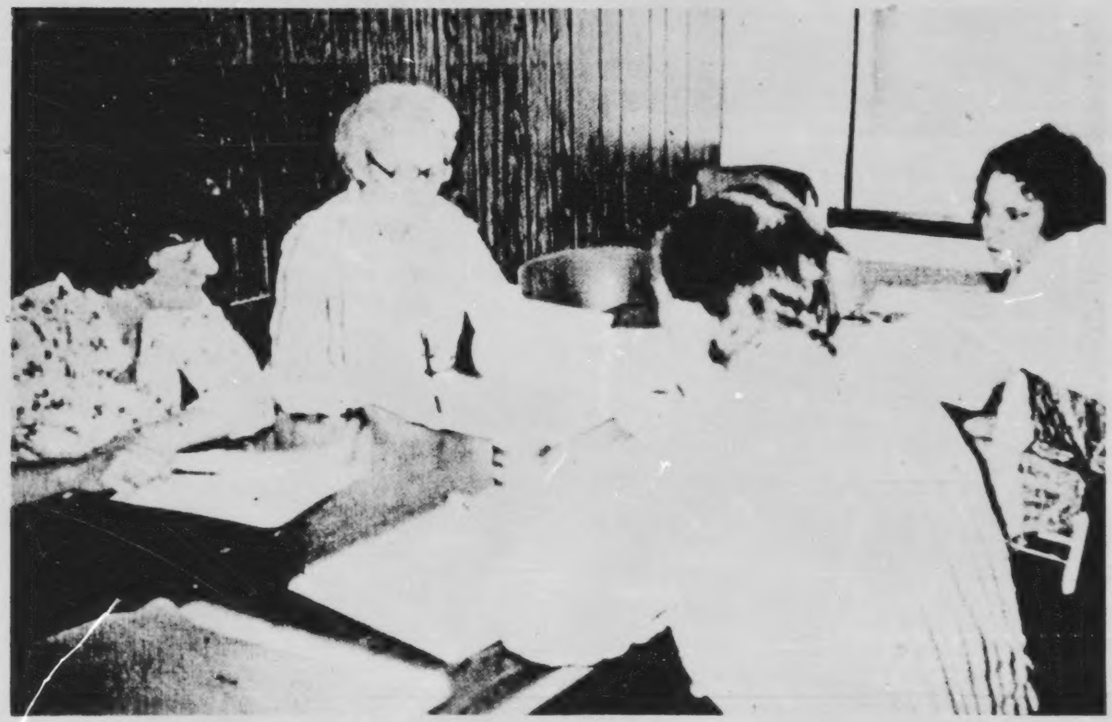
A. REVIEW OF THE LITERATURE

A review of the literature pertaining to the work adjustment of severely handicapped developmentally disabled clients produced little relevant information. Most of the recent literature referred to standard techniques (e.g., use of token economics, counseling, etc.) which have been found to be effective with high functioning highly verbal populations. The literature in factcorresponded well to the needs of practitioners dealing with the comparatively high function individuals that now receive services in most community facilities. As was noted in the Lynch and Gerber (1977) Survey individuals receiving services through comprehensive rehabilitation facilities tend to be higher functioning individuals with acquired disabilities.

B. THEORETICAL BASE FOR THE VSE ADJUSTMENT MODEL

Clients referred to the Vocational Services Expansion Project usually were too old to have benefited from mandatory education acts, had extensive histories of institutionalization, many had overprotective parents or resided with equally overprotective group home managers, and most had never held employment other than that afforded at the adult activity and work activity center level. Accordingly, if these individuals did not have appropriate job-related behaviors, had high assembly/production errors, or produced slowly it was contended that these behaviors had been learned (and thus needed to be unlearned) or that the appropriate behaviors were not even present in the client's repetoire. Most of the VSE clients did not have a cognitive construct of the words "work faster!" Thus, for many behaviors associated with successful sheltered or competitive work situations, traditional remediation approaches held little promise. Issues of "lack of insight," being "out of touch with one's feelings," and other dynamic causes of maladaptive behavior were not the underlying cause for the absence of appropriate work behavior.

The staff of the Vocational Services Component decided to regard the lack of client job-appropriate behavior as an educational rather than a dynamic concern requiring educational remediation. Based on experience it was not believed that regularly scheduled counseling sessions or other equally intensive short-term measures would be , by themselves, sufficient to address the clients extensive behavioral deficits and excesses. Accordingly, a simulated high demand work environment was created in which only attending, high rates of production, and error-free production were reinforced. As in assessment and in vocational training the use of negatives were prohibited as the Project contended that most severely handicapped persons were afraid to learn and subsequently afraid to produce in that much of their earlier training had been accompanied by the extensive use of negatives. Most clients, in fact, would often tremble and perspire profusely when faced with acquiring a new benchwork or service skill. To encourage client attending to the task and to reduce client anxiety only non-threatening positive positive and neutral training and supervisory techniques were employed.



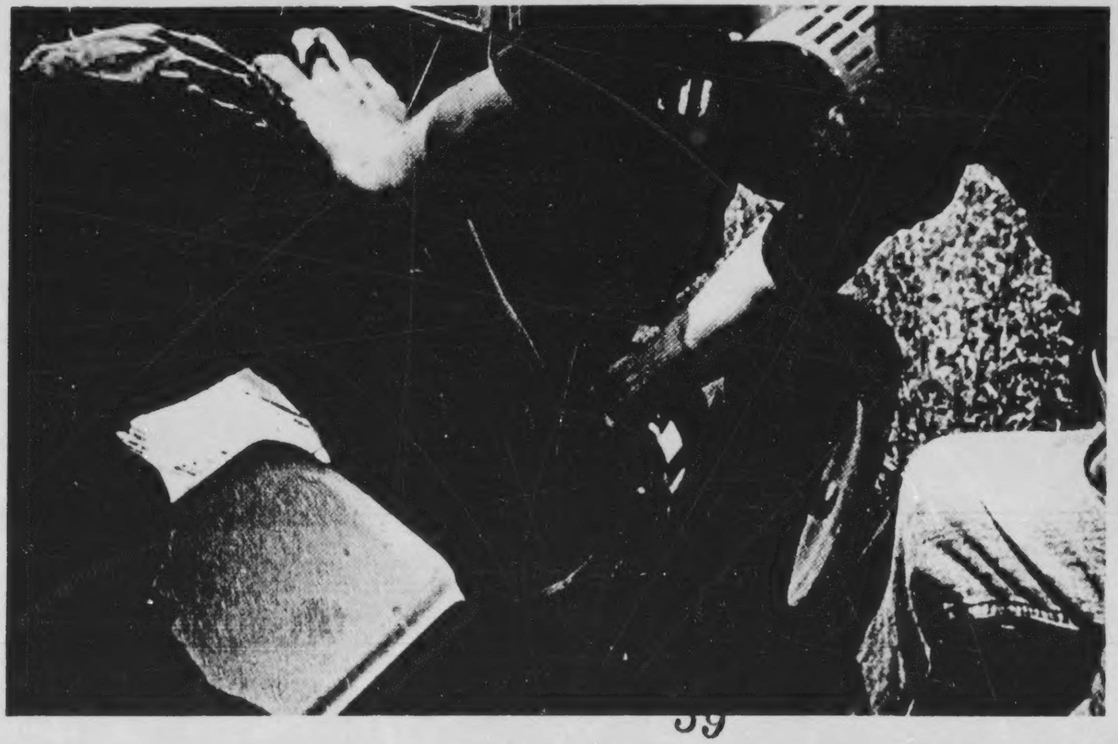
C. PROCEDURES

Clients were referred to the work adjustment environment if, in the judgment of the assessment team, work behaviors required development, reduction, or enhancement. Upon admission to the work adjustment environment the following behaviors were taught:

1. Upon entering the work environment to hang up street clothes and don work outfit.
2. At the sound of the buzzer (9:30 a.m.) proceed immediately to the assignment desk, secure clipboard and counter.
3. Produce the assigned task at a minimum rate of fifty (50%) percent of a non handicapped worker.
4. Produce the assigned simulated task without error.
5. Attend to the assigned task one-hundred (100%) percent of the time.
6. Switch tasks on command.
7. Signal parts shortages or other assembly problems by raising the hand.
8. Return immediately to the work station after the five-minute morning or afternoon rest period.
9. At lunch time proceed immediately to the lunch room and return to the work station at the sound of the bell. When scheduled for supportive services (speech, counseling, dental services, etc.) to proceed immediately to the appropriate clinic location and, following services, to return immediately to the work station.
10. At the sound of the bell signifying the end of the work day, proceed immediately to the lockers to remove work clothes and thence to the staging area to await transportation.

To achieve compliance the project staff utilized systematic training techniques which have been found to be effective in teaching complex skills to lower functioning persons. The simulated work task was a Bendix RX-76 Coaster Brake, chosen for its durability and because the component had extensive acquisition and production data on this task. Among the techniques employed were modeling. In modeling the staff engage in behaviors which are reinforced by other staff members. For example, staff were required to work at a station for five minutes during the morning and afternoon session. In that activity the supervisor would model producing the task at rapid rates, attending to the task, and working quietly. Often, the supervisor would also label his or her behavior by saying aloud "I certainly am a good worker. I am working quickly and watching only my work." Since many of the clients in work adjustment did not have a cognitive construct of "fast work" it was hoped that labeled self and other-reinforced supervisory behavior might provide the clients with modeled behavior of high saliency.

Physical priming was also employed in the adjustment environment. Over a period of time a client might develop a manipulation in a work task that was not part of training to criteria. Under such circumstances the adjustment supervisor might stand by the client and physically re-direct the client's holding of the assembly/process to ensure that the correct and efficient originally taught procedures are followed. Physical priming was also employed in gross motor activities. For example, illustration 3 shows a trainer physically placing the client's foot on the clutch of the Bolens Riding Mower. If a client committed a sequence error by forgetting to pick up the hand tally counter the supervisor could physically re-direct the client to the clip board/counter station, there to successfully retrieve the item dropped from sequence.



As many clients enrolled in the VSE adjustment program had good receptive language verbal cues were frequently employed as alternatives to modeling and physical priming or in combination with one or both of these training methods. Under all circumstances, on the production floor, verbal cue information was extremely economical. If a client, for instance, was observed to commit a sequence error upon entering the shop in the morning (e.g., the client did not pick up a hand tally counter) the supervisor may provide minimum cue information by say (for example) "Mary......counter". This utterance may be paired with a gestural prompt to direct the worker's attention to the missed item.

The objective of the work adjustment environment is to develop worker behaviors that meet or exceed the demands of competitive or sheltered employment, thus all adjustment procedures must be faded as rapidly as possible. Modeling sequences, physical primes, verbal cues and other prompts must be reduced to the absolute minimum or to that level at which client production-attending-error behavior begins to deteriorate. An ideal worker would be an individual who would perform assigned work at rapid rates, without error, under minimum conditions of supervision. As most severely handicapped persons can be trained to perform complex work in simplified work environments the objective of the adjustment program must be to teach the highest level of productive behavior under conditions of minimum supervision. The extent and kind of individualized supervision required by a particular severely handicapped worker is determined by fading from high supervisory conditions to conditions of less supervision.

As a continuing theme in VSE procedure only positive reinforcement was used for complaint behavior. Behavior that was other than that specified for the work adjustment environment was not punished; rather, staff ignored all behaviors that were not in compliance. In the three (3) year history of the VSE adjustment services only two (2) clients, evaluated as severely emotionally disturbed and trainable mentally retarded, did not respond to these procedures. For most severely handicapped clients the combination of positive or neutral environment, modeling, verbal cues, physical priming, and the use of contingency contracts, timers, and goal setting constitutes a powerful training environment.

Additional training tactics employed by the VSE adjustment staff were standard techniques of contingency contracting, goal setting, use of timers, and an incentive wage of one (1) cent per completed error-free assembly. In contingency contracting the supervisor would "contract" for a less desired behavior by promising access to strong incentives for that client (e.g., "If you can work without talking for the next five minutes you can work at the electronics table until lunch time"). In this case working at the cable harness table was a powerful incentive and the contingency (e.g., five minutes of quiet working) had a high probability of success, therefore increasing the probability of the client engaging in the desired behavior. In using timers the supervisor would set the timer for a given interval (e.g., five minutes) and request that the worker/client complete a specified amount of work that was five (5%) percent above the client's average production rate for that time interval. In goal setting clients would be asked to engage in a behavior (e.g., quiet working, making X units) for a specified period of time. No contingencies (other than implied supervisor satisfaction if the goal was met) of other contrivances would be employed. As a general rule, goal setting was used with those clients who were largely under stimulus control.

All techniques and procedures used in the adjustment environment required that supervisors make data-based decisions to avoid cluttering the adjustment stimulus field with contradictory and confusing messages. A client supervision sheet (See Appendix 9) is used to document a present behavior that must be strengthened, weakened, or eliminated and a short-term goal that will be the desired product following appropriate intervention. The supervision sheet is part of the work station documentation that always accompanies the client to the work station and all supervisors are required, as adjustment environment policy, to review each client's supervision sheet before the start of the treatment day or before the start of floor duty.

Also accompanying the client to any work station was a production sheet (See Supervision CHP) which documents a client's assembly behavior at half (1/2) hour intervals and an on-task sheet (See Supervision) which noted client attending behavior at fifteen (15) minute intervals. Consistent and systematic use of such forms allowed the staff to make data-based decisions on the effectiveness of procedures and itself served as a reinforcer for staff clinical behaviors. Additionally, production and attending data collected at 30 minute and 15 minute intervals provided staff with almost continous monitoring of client work behavior, yielding information that, for instance, documented consistent drops in worker behavior before lunch and before the end of the day. Interestingly enough these are worker behaviors that transcend disability or the lack thereof.

ⓧ Not all adjustment services occured in the simulated work environment. Adjustment services of necessity worked very closely with VSE counseling and family services. Frequently clients would come to the training environment at the start of the day highly agitated because of some event that had occured at the group or natural home. Arguments with parents and other residents at the group home setting were not uncommon and the unsettling influence of same would often carry over well into the work/training day. The main concern of the work skills and adjustment services staff was to teach the client that it was

perfectly permissible to feel upset about altercations with peers and authority figures but that there was a forum for dealing with such matters through the regularly scheduled group or individual counseling sessions which are described in detail elsewhere in this work.

When a client would begin the program in an agitated state evidence of same would usually take the form of crying, refusing to remove street clothes, refusing to start a work assignment. Whenever possible adjustment staff attempted to determine the cause of the client's concern before the sound of the work bell. If the problem concerned a disagreement with parents or peers the staff listened intently and sincerely while being mindful of the time approaching the start to work bell. As time closely approached the start of work the staff member would say "Thank you for sharing this with me, John/Mary. I can see that you're upset but now we need to get ready for work. I want you to talk about this today with Jay in counseling." When the client started work the staff would reinforce starting/continuing work behavior under conditions of feeling disrupted by saying "Good returning to work, Mary/John. It really makes us feel good when we see you being a good worker even when you're upset." It was felt that this procedure reinforced the immediate behavior occuring while giving the client a cognitive construct that one can continue one's regular activities even when emotionally unsettled.

The client also learned that the counseling group would indeed attend to his or her concerns and that there was an appropriate forum for dealing with personal concerns.

Similarly, families also were considered part of the adjustment service for VSE clients. As has been noted by Newton elsewhere in this work, parents of mentally retarded clients not infrequently constituted a significant barrier to the integration of the trainee into more adult-like roles in the community.

For the parents of many older moderately and severely retarded persons, their expectations of the social and vocational productivity of their sons and daughters were diminished almost from birth of their child. From the first evidence of a birth anomaly, the attending physicians may have suggested that the child would experience severe problems in coping with the demands of a normal social environment and many may even have gone so far as to suggest immediate institutionalization. In the absence of child-find and early intervention programs, the family of a severely handicapped child may not have received more optimistic information that ran counter to that of the medical community or counter to the prevailing social value that children with handicapping conditions needed to be protected from themselves, from others, and from the demands of society in general.

For parents with strong convictions or for those who fortunately had more optimistic friends or relatives or family members who encouraged them to attempt to access specialized or mainstreamed training for their severely handicapped child, the next barrier to be encountered was the community educational system. Before the advent of mandatory education acts, most educational training of moderately, severely, and profoundly retarded children were provided by well intentioned but largely untrained teachers (frequently the uncertified parents of the children themselves) who provided the pupils with a daily regimen of games and crafts in substandard facilities, usually church basements and not infrequently, in rented space in community adult activity centers, work activity centers, and sheltered workshops. It was not at all uncommon in the mid-1960's to find moderately and severely and profoundly retarded children separated only by a thin wall from the low level arts and craft activities being provided to moderately and severely retarded adult. The prevailing educational philosophy meted out during the school years of most children now in the 20's and 30's was that very little hope existed for increasing their functioning level and that whatever training needed to be done could be done for by caring persons in casual facilities.

Following "graduation" from these early educational enterprises, most moderately, severely, and profoundly retarded students merely walked across the hall to the games and crafts occuring in the adult activity centers. Thus, for the severely handicapped child and his/her parents, the expectation of full and productive life which would reflect the abilities of the child and the quality of training was dashed at birth and continuously quashed throughout the child's development. It is not surprising that the parents of older moderately and severely retarded persons frequently prove to be barriers to the sheltered and competitive employment of their mature sons and daughters in those communities fortunate enough to have appropriate adult services.

D. RESULTS

During the three (3) year life of the VSE adjustment environment 45 severely handicapped workers were admitted for adjustment services. Of the 45 clients served in adjustment only two (2) withdrew or were terminated because the adjustment environment was not sufficiently powerful to bring their behavior under stimulus control. For clients with comparatively uncomplicated severe to moderate mental retardation and related disabilities, however, the environment resulted in the development of desirable worker behaviors far in excess of those usually exhibited by similar clients in adult and work activity centers. In fact, under conditions of the supervisory environment used in the adjustment setting the VSE clients exceeded the minimum production level of clients typically found in sheltered workshops, community facilities usually disinclined to serve other than mildly retarded or physically handicapped citizens. As is evident in Table 3 VSE adjustment clients were capable of producing at very high rates over an extended period of time.

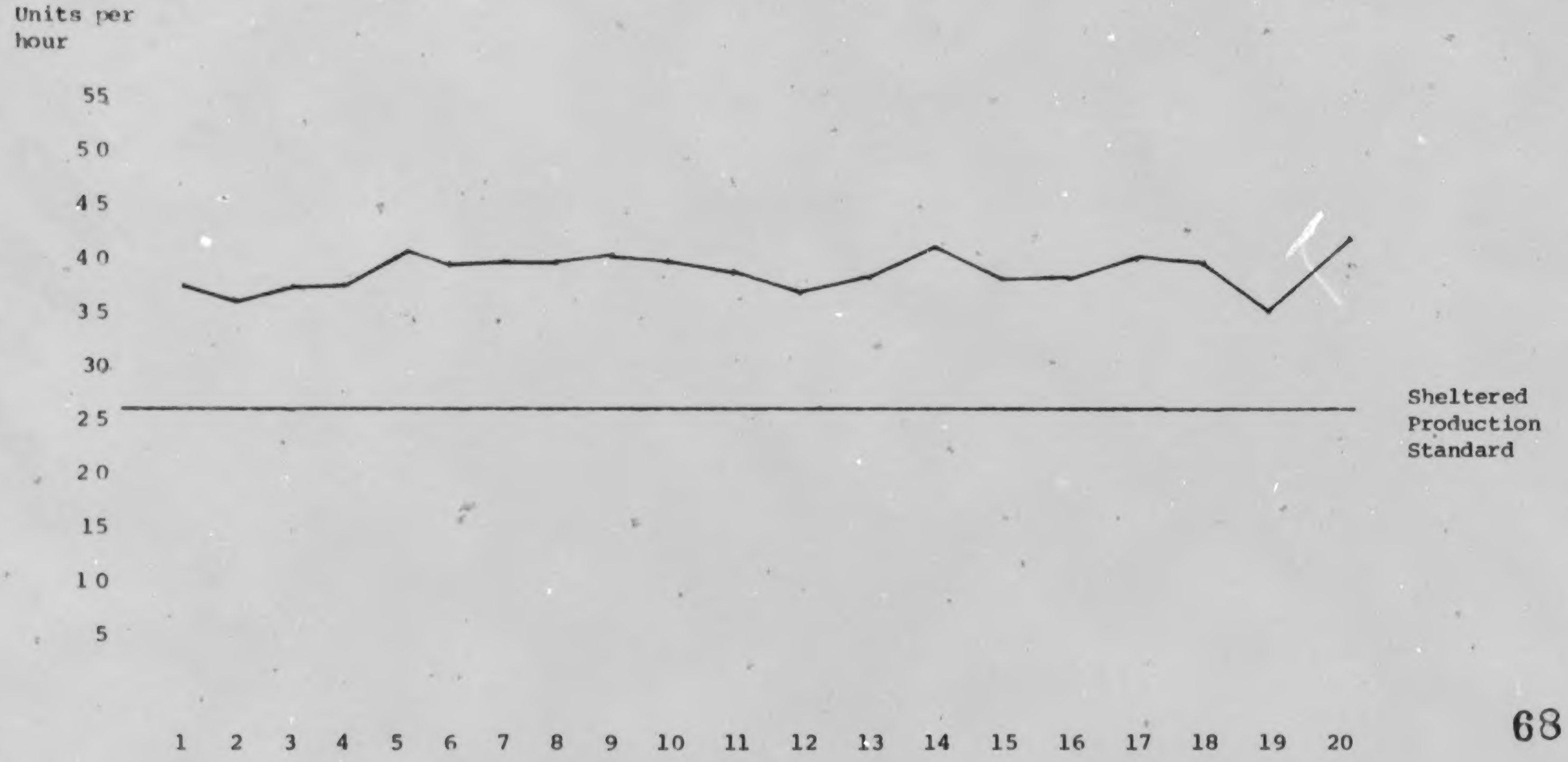
E. RECOMMENDATIONS

Work adjustment services found in most community facilities are designed to serve high functioning individuals, many of whom have had extensive work histories and who now must cope with newly acquired disabilities and the implications of same for their career and their family. Unfortunately, some adjustment services are used by community vocational facilities to enhance their limited income through purchase of service arrangements with community vocational rehabilitation services. In many such programs the curriculum is touted as offering "real work experiences" when in fact the major mission of the "adjustment program" is to get as much of the "real work" out to the loading dock as possible. Clients whose adjustment problems might result in work interruptions or slowdowns are usually quickly discharged from such thinly disguised programs. As was noted in the Greenleigh Report (1975), community rehabilitation facilities are constantly choosing between their need to offer treatment services and their compelling need to generate sufficient contract and service revenue to continue their existence.

This is not to suggest that community training facilities are engaging in

TABLE 3

Composite production of VSE clients over a 20 week period of work adjustment



such practice with malicious intent; rather, community facilities for all handicapped adults are supported so poorly and are given so little moral support by the community for their activities that their current delivery of service, weak as it might be, stands as a testimony to the staff's dedication. Dedication, however, will not be sufficient to meet the service needs of developmentally disabled individuals who, in the near future, will increasingly constitute a larger percentage of that part of the community requiring special life-long assistance.

At present, training facilities providing day service to developmentally disabled adults (adult and work activity centers) do not have a work orientation or provide such simple work (simple sorting, crafts, hand sanding, etc.) at such low volume that the client is probably learning to work and attend at low levels. Adult and work activity centers should consider the utilization of simulated high demand work environments to teach their trainees or clients work behaviors that are far in excess of those elicited by the community sheltered workshop. These centers are ideally situated to provide such service in that their operations are seldom supported by contract revenue and are, instead, supported by direct funding from community mental health centers or the United Appeal or a combination of both.

In other words, adult activity and work activity center staff should be responsible for the vocational and social training of developmentally disabled adolescents and adults and the cost of that training, as with all education, should be borne by the community and not be contingent upon contract revenue.

The staff of adult activity and work activity centers should visit community sheltered facilities and competitive industry as well. Work station duties (rates of production, number of tasks to be learned, time and duration of rest periods, interactions between fellow workers, extent of supervision provided, etc.) should be specified and work tasks analyzed. These tasks or similar tasks should be replicated in the adult activity and work activity facilities, the clients trained to criteria using the techniques specified in this chapter, and the trainees subsequently introduced to the work/supervisory environment where high rates of production, low error rates, high attending, and the ability to switch tasks on command will be the staff's central training objectives. When the trainee has met criteria for sheltered or competitive industry steps should be taken to refer the client to the higher level work environment, a task which will be facilitated by the extensive documentation possible through the use of simulated environments.

Local sheltered and competitive industry and the district office of vocational rehabilitation services should be fully aware of the training objectives of the local adult/work activity center, should assist in establishing criteria, and should be prepared to receive and fund such well trained clients when criteria are met.

The work adjustment environment developed by the VSE Project must be conducted in clinical fashion. Staff at all times must model the behaviors to be imitated by clients and must be prepared to ignore disruptive behavior while simultaneously being prepared to reinforce appropriate behavior. Most staff are not trained to behave so systematically and need to be exposed both to the philosophy and technology attendant to the use of habilitation procedures in simulated work environments. This can be most readily accomplished through in-service training for those now in the field and through personnel preparation programs for pre-professionals now at university or college.

The use of a simulated high demand adjustment environment as a pre-condition to actual work skill training was demonstrated by the VSE Project to constitute a replicable training strategy. It has been shown that lower functioning persons can be taught to attend to complex work tasks in excess of ninety (90%) percent of the time, that most clients can be taught to work at or above sheltered standards of production at tasks far more difficult than those usually encountered in sheltered facilities.

Typical problems reported by community activity facilities were seldom encountered in the VSE adjustment environment. Wandering away from the work station, staying in the bathrooms, disrupting co-workers and other maladaptive work behaviors were quickly brought under control in an environment that only reinforced a narrow band of behaviors and which made the desired behaviors eminently clear through the use of staff and client modeling. However, it should be remembered that the clients worked in an environment that was highly supervised. Nothing in the experience of the VSE Project suggests that this adjustment procedure or any other procedure results in a "cure" for developmentally disabled workers. Rather, this demonstration project results suggest that developmentally disabled workers are capable of very high levels of work performance when appropriate adjustment and supervisory procedures are employed.

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CHAPTER V

TASK ANALYSIS, TRAINING & SUPERVISION

A. TASK ANALYSIS

Before a new job was introduced to a worker, the task was first analyzed by the staff. Task analysis procedures were utilized to insure consistency in subsequent training sessions. From one session to the next, the task was guaranteed to be performed exactly the same way. When scheduling dictated that a second trainer take over, that individual also presented the assembly only as specified in the task analysis. Such consistency was crucial to facilitate effective training procedures. Task analyses were prepared for all jobs, both benchwork assemblies and service area tasks.

The task analysis, when completed, included three elements: 1) a diagram of the layout of the work area and parts; 2) a description of the composite learner for whom the analysis was written, and 3) a list of the component steps.

The diagram was an additional aid which insured uniformity. Pictured were the work table, position of stool, sequence of parts bins, location of tools and counter, and area for completed assemblies. All diagrams were prepared for the right handed worker. When training a left-handed worker, the layout of items on the work table was reversed. While not artistic masterpieces, staff found the diagrams easy to follow.

In addition to the diagram, the first page of the task analysis included a description of the composite learner. The description was general in nature listing such characteristics as physical limitations, perceptual difficulties, IQ range, and receptive language abilities. Specific behavioral problems were not noted. When preparing the first analysis of a task, the composite learner was usually defined as functioning at the low end of the spectrum, while having no physical limitations. Such a learner required many steps to complete even the least complex job. However, jigs or adaptive devices were not needed.

When higher functioning clients were trained, the smaller increments were consolidated into larger steps. For individuals with physical limitations, it was necessary to alter only certain steps of the analysis. Clients with severe motoric involvement usually required more extensive alterations with the use of jugs and other adaptive devices. In all cases, once the original task analysis was prepared; it was not necessary to completely rewrite the analysis for other learners.

The final and most time-consuming element of the analysis was breaking the task down into its component parts. The task analysis procedure used by the Vocational Services Component was a composite of those done in other vocational experiments (Bellamy, 1976; Gold, 1972; Crosson, 1969). Initially, staff determined the most efficient method for completion of the task. This was accomplished by having staff members first work separately on sequencing the task. Within the group, then, individual strategies were shared and times. With a specific sequence in mind, staff was able to state the motoric behavior required by the client to complete the task in the prescribed manner. We headed this description with the title, "MANIPULATION." The items in the column specifically defined: which hand, what type of grasp, and which fingers. Examples would be, "Hold screwdriver with full grasp in dominant hand," or "With nondominant hand and pincer grasp, turn the bolt clockwise."

Adjacent to the "MANIPULATIONS," was second column listing, "DISCRIMINATIONS." In his definition of task analysis, Bellamy (1976b) stated that it included "an examination of each part for its intrinsic stimulus cues." These stimulus cues were either visual, auditory, tactile, or proprioceptive. A visual discrimination would be "The letters go up" or "Two inches from the end." "Until it clicks" would be an auditory discrimination; while a tactile discrimination would be "The smooth side to the right." "Until it is tight" was a standard proprioceptive discrimination.

Completion of each manipulation with its paired discrimination became, for the client, the stimulus for subsequent steps of the task. This association became the basis for later training sessions.

A few general guidelines aided staff in choosing which discriminations were used. First, the most obvious discrimination was used in the analysis...visual, auditory, tactile, or proprioceptive. However, when it was known that a client had learning problems in any particular area, another intrinsic cue for that step was determined (i.e., For a blind client, tactile or auditory discriminations would be substituted for visual discriminations.)

Next, if possible, all visual and tactile discriminations were oriented in the same direction. For example, if the analysis of one step listed "The letters go up;" later steps followed with "The smooth side goes up." Finally, staff was thorough and specific, leaving no margin for arbitrary movement while completing the task. Sample task analyses in the appendix demonstrate the detail in each analysis.

B. PRE-TRAINING CHECKLIST

With the task analysis completed, performance criteria for both the client and trainer had to be established. Error criteria stated how proficiently a client must perform a job before trainingwas considered to be complete. Many times, error criteria were set in the industrial norms for quality control which were specified for the job. On other jobs, the availability of "Quality Control" supervisors would influence the error criteria. The VSC set relatively "high" error criteria for client training. For example, on a task requiring wire stripping for an electronic input cable, error criteria was set at 10/10 on 2 consecutive days.

In the short run, "high" error criteria lengthened the amount of training required. However, the need for a supervisor to constantly monitor for quality production was lessened.

Exit criteria established a timeline for staff to follow in training. Before the first session, the trainer/staff stated how long he/she was committed to training. This schedule was listed in terms of time (i.e., 3/20 minute sessions/day for 1 week) or in terms of number trials (i.e., 100 trials). By stating an exit criteria, the trainer was guaranteeing that trialing would occur for the specified timme. In this way, arbitary decisions about the client's inability to learn the task after a few sessions were limited.

The final decision to be made prior to the first session was how the task would be presented to the client. The trainer had 3 choices: forward chaining, backward chaining, and complete cycle chaining. In forward chaining, the client was assisted through the first step of the task. The trainer then completed the remaining steps. When the client could perform the first step independently, the trainer assisted the client through the second step. Subsequently, the trainer completed the remaining steps. This procedure continued, gradually addingone step at a time, until the client was performing the entire tasks independently.

With backward chaining, the trainer performed the entire task up to the last step. The trainer then assisted the client to do the last step. When the client could perform this last step independently, the trainer assisted him/her to do the second to last step of the task. The procedure continued, with the client acquiring new steps from the end, until the client performed the task independently.

Complete cycle chaining required that the trainer assist the client, as necessary, through each step of the task. Training continued with the trainer providing assistance whenever it was needed until the client met error criteria.

For the most part, VSC used complete cycle chaining in training those tasks which could be completed in 10 minutes or less. Longer jobs were (frequently) broken down into sub-tasks. Each sub-task was then trained using full cycle chaining. Subsequent sessions chained the sub-tasks together, using forward and backward methods. Occasionally the task itself dictated which method should be emmployed. For instance, in training clients to operate the riding mowers, backward chaining was the choice. Staff found it imperative for clients to demonstrate "braking" before "acceleration!"

C. TRAINING

All training during the project was done with a 1:1 client/staff ratio. Given the lower functioning level of the clients, staff felt it was important to invest much of our time in training. Our main objective was to provide a failure-free learning environment. That is not to say that the clients did not make errors. Rather, that Vocational Services Component staff intervened before a small error ended in failure for the entire assembly. Our intent was to guarantee a positive experience for individuals who previously had never worked successfully.

The types of interventions that staff utilized to insure client success were modeling, priming, verbal cues, and positive reinforcement. Based on successful experiments by other researchers (Bellamy, 1976; Gold, 1972; Crosson, 1969; Williams, 1967; Clark, 1955), we incorporated these techniques (with some modifications) into our project.

Modeling was an important aspect of all training sessions. First, the trainer modeled appropriate work-related behaviors. Generally, the trainer displayed on-task, attending behaviors. No coffee, cigarettes, or term papers were kept off to the side for brief breaks. Nor did the trainer respond to or initiate social conversation during the session.

With the client seated or standing next to the trainer, the trainer modeled the entire task from beginning to end. This demonstration of the job was performed just as the task analysis specified. Following the initial modeling, the trainer stated, "Now you try." During the trials which followed, the trainer used his/her discretion as to which intervention (or combination of interventions) to use.

One choice was to model the specific step of the task that the client needed to perform. For clients with receptive language abilities, the trainer used the concurrent phrase, "Make yours look like this," or "Do this," or "Hold it this way." The trainer continued to hold the assembly (or subassembly) in view of the client.

Many times, it was found that a client did not have the imitation skills necessary to make modeling an effective intervention. If a client did not respond to modeling, trainers did not eliminate modeling from the session. Rather, trainers continued to use modeling along with other interventions. In that way, clients not only learned how to perform the task, but learned how to model as well.

One of the other possible interventions was priming. Using priming, the trainer physically manipulated the client's fingers, arms, feet, etc. to complete the desired manipulation. Care was taken not to allow the priming to becoming reinforcing. Trainers were firm in touch, never caressing. But neither did they bruise the client or convey negative reinforcement through priming.

Verbal cues were also used, either singly or with modeling or priming. The full task analysis was not read verbatim to the client. Instead, a few words or phrases were used to assist the client in making a discrimination ("round end up") or a manipulation ("spin"). Only the same word or phrase was used to describe a part of an operation (i.e., "Round end" never was altered to "circle.") Such consistency was crucial for clients, especially those with limited receptive language capabilities. However, we did not rely heavily on verbal cues by using them to assist in every step of the task.

All reinforcement used during a training session was of a positive nature. Trainers responded to appropriate behaviors by saying things like, "nice working" or "excellent job." Positive reinforcement for a specific behavior was also used (i.e., "I like the way you hold it with two fingers.") Nonverbal positive reinforcement was demonstrated by a pat on the back or a gesture.

The goal of all training was to have the client achieve error criteria. That is, to have the client perform the task independently. In order for that to occur, it was necessary for the trainer to gradually reduce and eliminate his/her interventions. This process was called fading. On every trial, the trainer provided less assistance to the client. A prime using two hands was faded to one hand. "Round end up" became "round". Reinforcement was given less frequently. If the intervention was reduced too drastically or quickly, the client was unable to perform the task. In that case, the trainer was able to increase the amount of support given.

D. CODING

In order to keep an accurate record of the client's acquisition of the task, a coding sheet was used. This coding sheet was filled in by the trainer during the session, by a student or staff observer, or by the trainer while watching a videotape of the session.

Each step (or combined steps) of the task analysis was listed across the top of the sheet (See Appendix 10). Trials were coded horizontally following each step of the analysis. If the client performed the step correctly without assistance (physical or verbal) from the trainer, the blank for that step was left empty. In other words, no error occured. However, if trainer intervention was required, an error was recorded. Three types of errors were possible:

O - order error. The client went out of sequence in performing the task.

M - manipulation error. The client did not display the motoric behavior outlined in the task analysis.

D - discrimination error. The client did not respond to the intrinsic stimulus discriminations.

The advantages in using a coding procedure were numerous. First, the trainer was able to go back and look over the results of each training session and was able to determine where and what kind of errors were occuring. Before beginning the next session, specific training aimed at just one aspect of the task could be used. Second, the coding sheet showed the trainer exactly when error or exit criteria were reached. By keeping track of the time for each trial, one was able to see progress even if errors were still occuring. Finally, when the original trainer was unavailable for later sessions, another trainer could determine how far the client had progressed in training. All trainers, in following a coding sheet, were forced to be consistent.

E. SIMULATED WORK

The necessity of contractual work for self-supporting workshop was unquestionable. But as noted in the Lynch and Gerber survey (1977) of Michigan facilities, many lower functioning individuals were not being employed by sheltered facilities. Frequently, their off task maladaptive behavior led to work slow-downs that the workshop could afford to tolerate. Instead of benefiting from work experience, these individuals were removed from the environment, lest they jeopardize vital contracts.

A possible solution to this dilemma was to provide simulated work for the lower functioning clients to produce. Without rigorous production schedules and demands, clients were less likely to be removed from the work setting for inappropriate work behavior. The Vocational Services Component demonstrated that simulated work could be used for teaching necessary work behaviors. Specifically, the project used 1) the assembly of the RX 70 bicycle brake (14 pieces), 2) gate valve and 3) Chrysler rollover valves. A fourth simulated task, Bendix RX 70 bicycle brake disassembly, was introduced when VSC staff could no longer meet the increasing demand for parts. As with other tasks, clients received an incentive wage for disassembly.

Tasks analyses for all simulated work is in Appendix 11.

Training for Bendix RX 70 bicycle brake assembly was done by the VSC evaluation team. Other tasks were trained by workshop staff and students using standard VSC procedures. See the Adjustment Services chapters in this Report for a more detailed exploration of work simulation.

F. INTERACTIVE

The area of electronic assembly was ideally suited for sheltered facilities. The assembly parts were clean, small, light, and easy to transport. Because specialized skills were required, payment for such assemblies tended to be higher than for less complex work. The increased use of computers made electronic assembly a lucrative area for all workers, including those who were mentally retarded.

In 1977, the Vocational Services Component was subcontracted by Interactive Systems, Ann Arbor, Michigan, to assemble a 16-bit input cable. To faclitate production, the assembly was divided into four components. Individual workers were then trained in one subassembly:

1) wire stripping: $1/_8$" of insulation was removed from each of the 18 wires in the cable using a hand stripping tool.
2) wire crimping: a terminal pin was attached to each of the 18 wires in the cable using an AMP Hand Crimping Tool.
3) stuffing: each of the 18 terminal pins was inserted in the connector following blue-print specifications.
4) finishing: a hood cover and finishing hardware was added to the connector. See complete task analyses in Appendix 12.

Training for the wire stripping subassembly was introduced in 2 phases. Both phases required that $1/_8$" of insulation be removed from the end of the wires without cutting the interior wires. The first phase used individual lengths of pre-cut, 24 awg. wire. Following acquisition of stripping separate wries, the client was trained to perform the same operation on wires contained in the cable.

Training procedures followed the format previously described. Data on both phases is as follows:

Phase I

Error criteria: 10 of 10 consecutive wires were correctly stripped.

Trials to criteria: 120

Time to criteria: 9/19 - 9/21 (50 min.)

Errors: T - 76
M - 33
D - 19
O

Broken wires: 24

Phase II

Error criteria: 2 of 2 consecutive cables were correctly stripped (36 of 36)

Trials to criteria: 15 cables

Time to criteria: 9/22 - 10/1 (129 min.)

Errors: T - 56
M
D -12
O

Broken wires: 44

Subsequent production rates on sets of 18 wires/cable show the following increase in performance.

Week 1	10/10	7.8 minutes	% of non-handicapped*	44.8%
Week 2	10/17	7.3 minutes	"	47.9%
Week 3	10/24	5.6 minutes	"	62.5%
Week 4	10/31	4.2 minutes	"	83.3%

Staff time: 3.5 minutes

*While industry norms were available for the entire assembly, they were not available for the 4 subassemblies. The non-handicapped rates were obtained by analyzing videotapes of industrial workers and by having non-handicapped staff perform the operations.

Crimping of the terminal pins onto the wires required the use of the specialized AMP Hand Crimping Tool. Briefly, the procedure involved setting the pin in the tool, inserting the stripped wire into the pin, then squeezing the tool closed. During the entire procedure, it was imperative to keep the 9 pairs of wires together and in order.

As in wire stripping, the crimping was trained in 2 phases to limit irreparable damage to the cables. In the initial phase, pins were crimped onto 6" lengths of pre-cut 24 aug. wire. With acquisition of phase 1, the client began working directly on the cables in phase 2.

Our standard training procedure was followed with the following results:

Phase I

Error criteria	10/10		
Trials to criteria	90		
Time to criteria	9/7 -9/27		(140 min.)
Errors	Total		104
	M	70	
	D	31	
	O	3	
Training time per wire			1.6 minute/wire

Phase II

Error criteria	15/15		
Trials to criteria	150		
Time to criteria	9/28 - 10/4		(225 min.)
Errors	Total		45
	M	3	

D	42
O	0

Training time per 18 wires 27 min./18 wires

Production

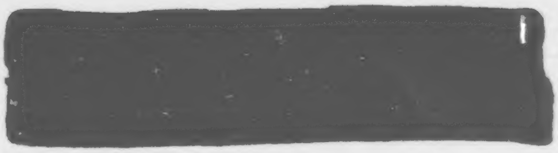
	min.	18/wires	errors/cable	% of non-hand.
Week 1	10/3	25.5	3	
2	10/10	18.5	3.3	
3	10/17	15.0	1.0	
4	10/24	16.5	3.5	
5	10/31	13.3	1.2	
6	11/7	14.0	3.5	
7	11/14	13.3	2.0	

With the wires stripped and crimped, it was necessary to place the terminal pins in the connector. 74 holes in 2 rows were on a connector. Following the blueprint for the cable, each of the 18-color coded pairs was placed in a specific hole.

Again the job was trained in phases. During Phase I, the client leanred to identify color-coded pairs of wires by following a training booklet.

Error criteria	9/9	
Trials to criteria	63	
Time to criteria	10/10 - 10/13	35 min.
Errors	Total	34
	M	0
	D	34
	O	0

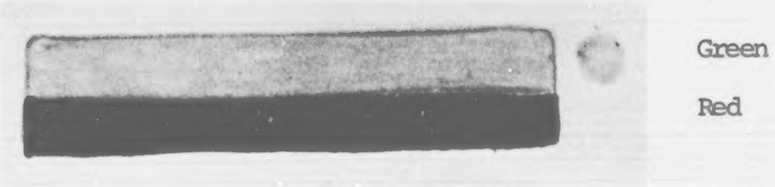
Training Booklet, page from Phase I



Having mastered Phase I, the client then learned to identify a specific wire within a colored-coded pair.

Error criteria	18/18	
Trials to criteria	92	
Time to criteria	10/13 - 10/24	95 min.
Errors	Total	34
	M	0
	D	34
	O	0

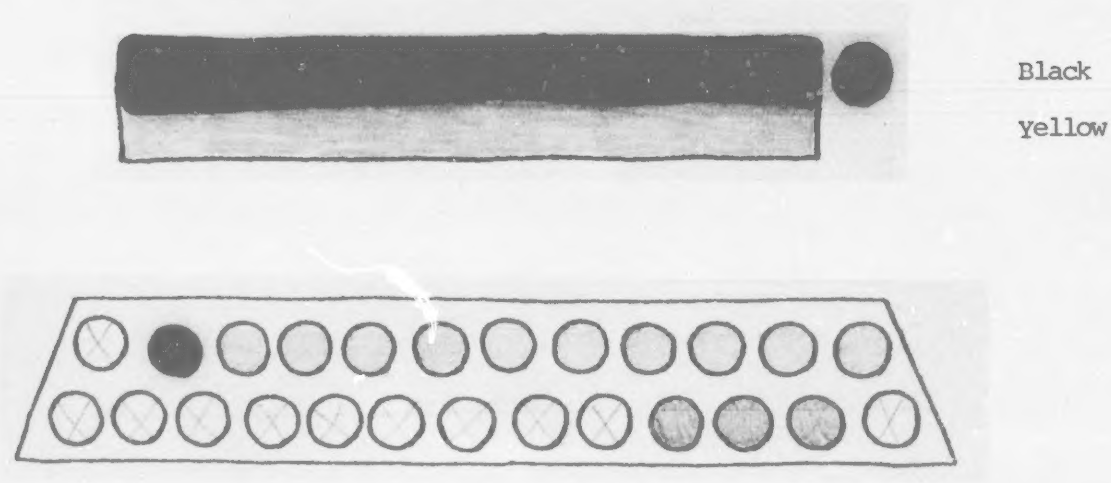
Training Booklet, page from Phase II



In Phase III, the actual placement of the pins into the connector was training. The booklet was still used as a job aid. (Interactive Systems maintained the option to redesign portions of the cable. With that in mind, staff determined that following the booklet would limit difficulties in retraining on a revised cable.)

Error criteria		
Trials to criteria	Not achieved	
Time to criteria	10/24 - 11/21	174 min.
Errors	Total	298
	M	114
	D	140
	O	44

Training Booklet, page from Phase III



The final subassembly involved the attachment of a hood cover. The hood cover had 6 pieces and required the use of a screwdriver. The operation was trained using complete cycle chaining.

Error criteria	5/5	
Trials to criteria	8	
Time to criteria	11/9 - 11/16	55 min.
Errors	Total	71
	M	36
	D	28
	O	7

Trainable time per cable 4 min./cable

G. THETFORD

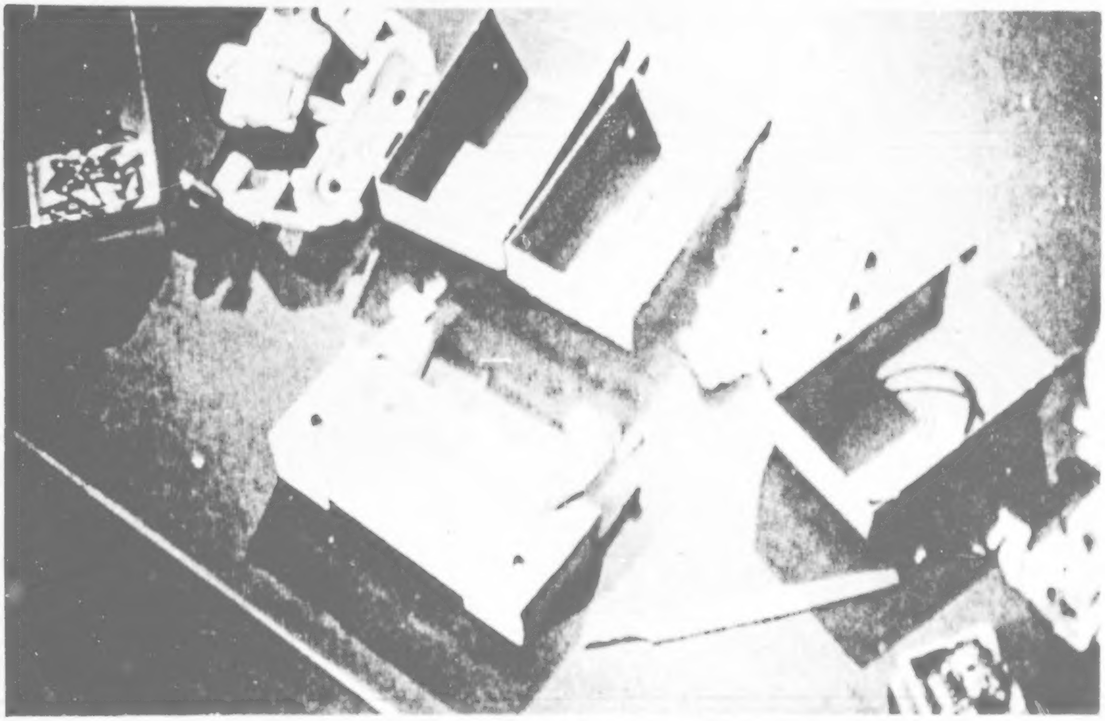
With the increase in sales of recreational vehicles, accessories for those vans and campers were also in demand. In particular, the need for portable toilets rapidly increased. Internal parts for the toilets were lightweight plastic, making them easy to transport and virtually unbreakable.

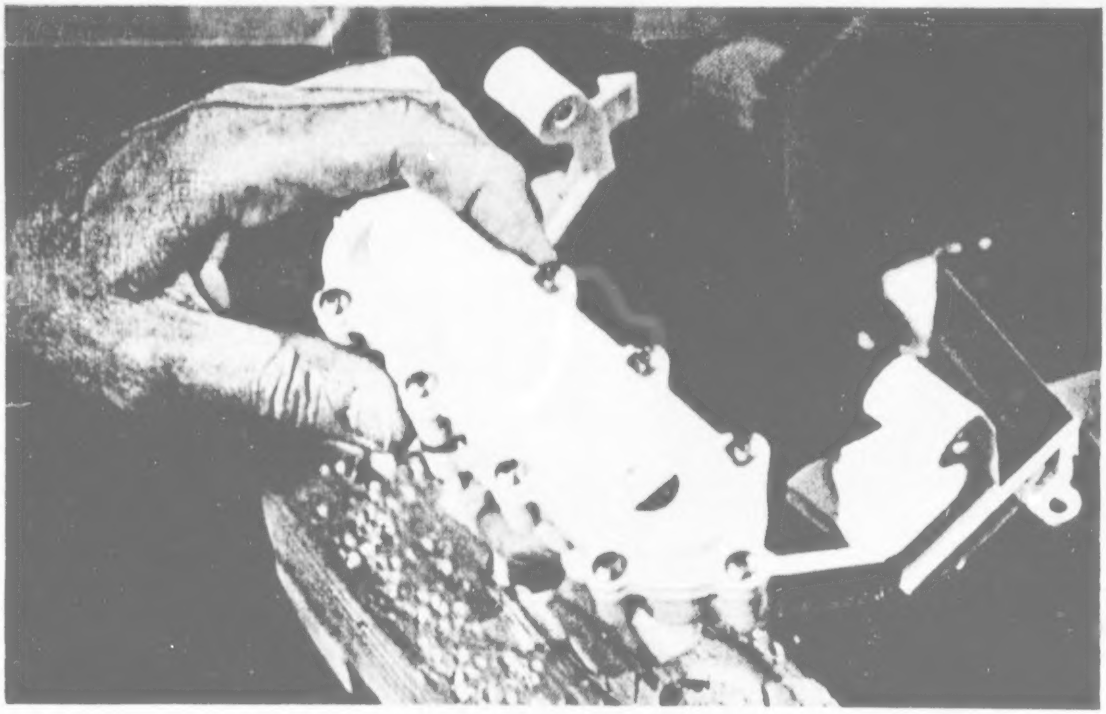
A prime manufacturer of portable toilets, the Thetford Corporation was located 10 miles from ISMRRD in Dexter, Michigan. From Thetford, we were subcontracted to produce four internal assemblies.

13" tubes and 20" tubes: 3 tension clips were attached to a pre-cut length of plastic tubing by using a specially adapted pliers.

caps: using a hand-operated seal press, a rubber gasket was inserted into a plastic cap.

flush valves: with a pneumatic screwdriver, the entire 15 piece valve was assembled.





spring clips: 2 tension clips were hand mounted onto the connector. Task analyses for completed assemblies are in Appendix 13.

Training on these tasks followed standard VSC procedures. However, for those tasks requiring the use of tools, a desensitization procedure was first introduced. The client was able to hold and examine the tool prior to systematic training. With the pneumatic screwdriver, the clients were also oriented to its noise, vibrations, and pressurized flow of air.

H. SUPERVISION

When the client was trained to error criteria, he/she proceeded to the production (workshop) setting. In that workshop, clients worked with 10-15 other individuals. One supervisor (and occasionally one student assistant) monitored the clients activities. A diagram of the layout of the workshop is included in Appendix 14.

VSC had 2 goals for clients in the workshop. First, the clients were to produce at 50% (or more) of non-handicapped rates of production. Second, clients were to maintain at least 95% on-task behavior.

In order to achieve these goals, the supervisor utilized a behavioral approach in working with the clients. All appropriate, on task behavior (i.e., going directly to the work station; working while visitors were watching) was consistently reinforced. At the same time, inappropriate work behavior (i.e., crying; leaving the work station to look out the window) was ignored by the supervisor. The only exception to this procedure was that the supervisor did intervene to prevent physical harm to him/herself or other workers. Reinforcement of this positive nature was random, varying according to supervisor's styles.

In addition to random reinforcement, the supervisor had fixed times at which to give positive reinforcement to the clients. To insure that the reinforcment was given on schedule, two forms were used. Responsibility for completing the forms, located on a clipboard at the client's work station, was the supervisor's. First, production data was gathered. (See Appendix 15) On every hour and half hour, the supervisor graphed the number of units produced in the previous 30 minutes. This procedure not only kept an accurate record of a client's productivity, but provided visual feedback to the client on his/her performance. In keeping with the behavioral format, increasing or rapid work was strongly reinforced. At the end of each week, average hourly production rates were calculated and recorded in the client's master chart.

The second sheet (See Appendix 16) tallied the client's on-task behavior. Every 15 minutes, the supervisor surveyed the room to determine who, at that instant, was on-task. (On-task behavior had been defined as being at one's work station and manipulating parts toward completion.) For those individuals demonstrating on-task behavior, the supervisor positively reinforced them while putting a "dot" in the space for that time interval. The specific job that the client was performing at the time was also noted. Clients engaged in off-task behavior was then tabulated.

Examining these forms, staff was able to observe patterns in clients' work performance. Phenomena such as boredom, fatigue and reaction to medication were all observed. Most important, this on-going data gave staff a concrete basis for programming decisions.

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CHAPTER VI

GROUNDS MAINTENANCE

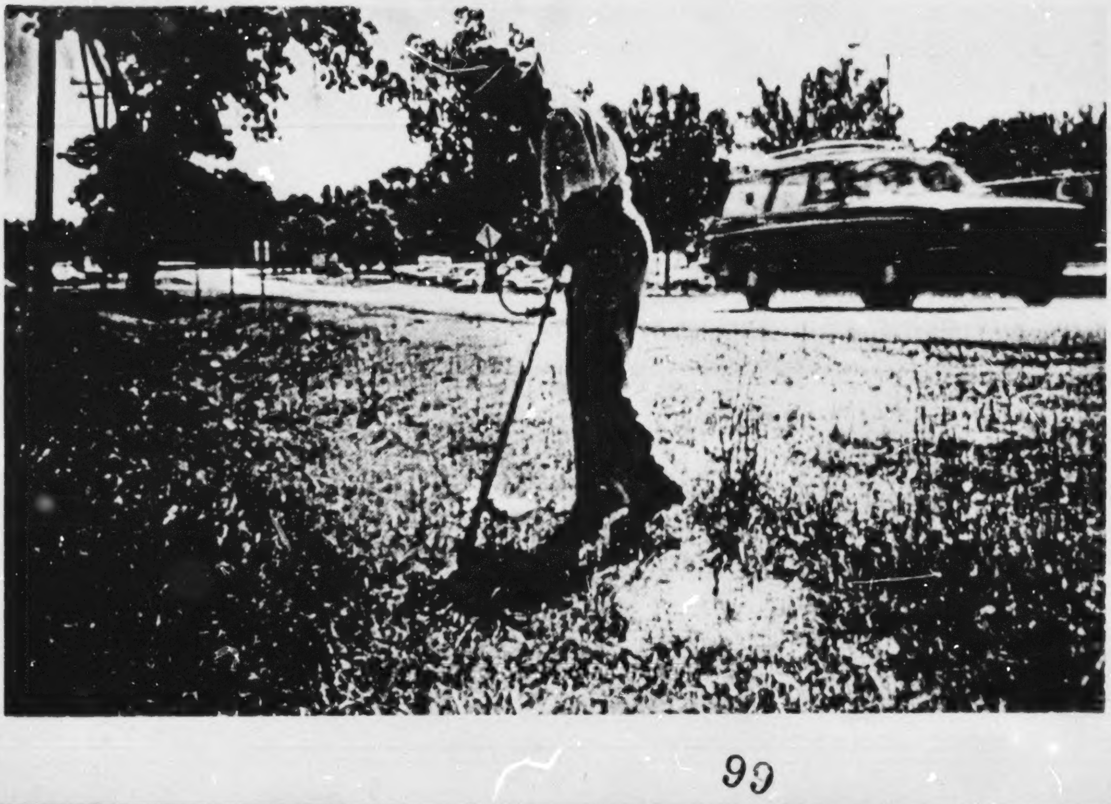
A. LAWN SERVICE

During the summer months of 1976 and 1977, the VSE operated a lawn service program. In 1976, a contract was secured transferring maintenance responsibilities for a portion of North Campus (University of Michigan) to the project (See Appendix 17). In 1977, an additional contract was established with the National Sanitation Foundation bringing the total areas for which the project was responsible to 8 acres (See Appendix 18).

The equipment used in this program consisted of the following: 2 Bolens 16 horsepower riding mowers; 1 weed eater; 1 Bolens pushmower; 1 FMC pushmower, 1 Van; 1 trailer; toe guards for each worker; safety glasses for each worker; trousers and shirt for each worker. Safety features intrinsic to the design of the power equipment were the deciding factors in choosing the models purchased for use by the lawn maintenance crew.

Twenty-five task analyses were written for the four types of power equipment to be used by the lawn crew. Turning on and off the motors as well as operating each machine were considered as discrete tasks to be analyzed. Motor manipulations and sensory discriminations necessary for task completion were described in the task analyses (See Appendices 19 for Complete Task Analyses).

Each member of the lawn crew received individualized 1:1 training. Task characteristics and trainee needs were considered in determining the training strategies to be used. For instance, a person learning to operate a riding mower was trained to stop the mower before being trained to drive the mower. The tasks were presented in a full cycle format, with physical priming, gestural prompts and limited verbal cues used as the modes of feedback to the trainee. One complete trial was always modeled for the client as training began. All tasks except actually learning to mow the specific contract sites were trained in the parking lot behind the Institute. Once the crew had learned all aspects of equipment operation except actual grass cutting, the crew moved to the contract sites where training was completed.



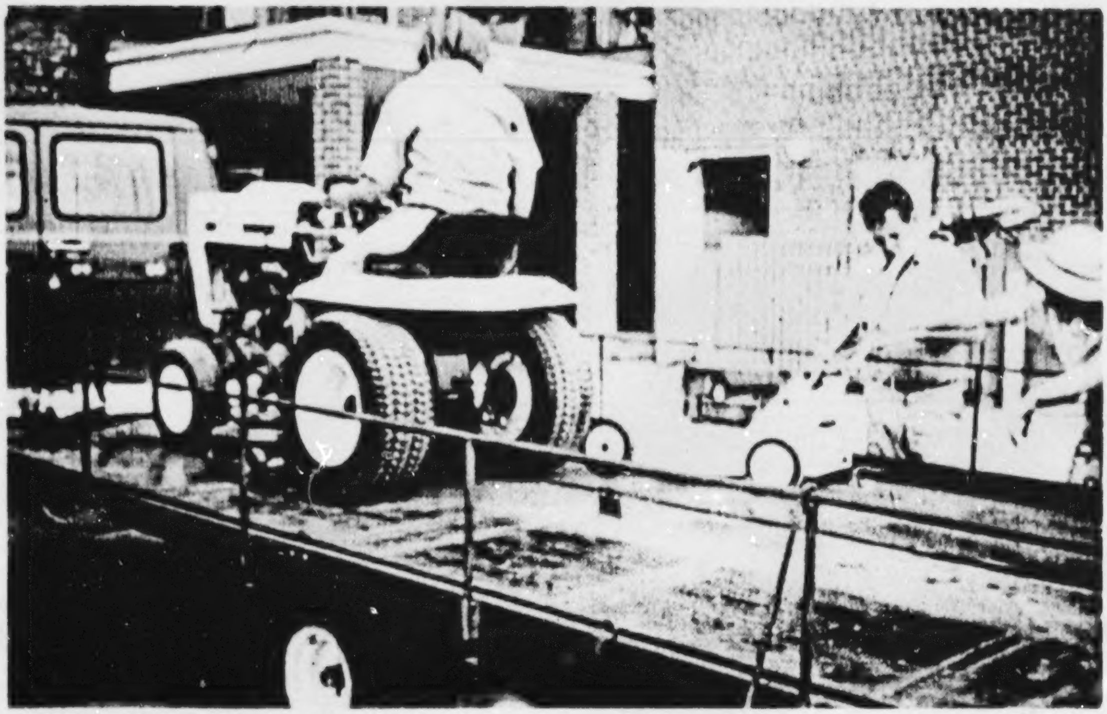
Data were collected for each trial as crew members learned to operate the equipment. Client performance was coded using "M" for manipulation errors, a "D" for discrimination errors and an "O" for order errors. Success criterion was set a 10/10 correct trials. Safety concerns demanded that 100% accuracy be required of clients operating equipment. (Appendix 20 & 21)

As trainees learned to mow the contract sites, data were collected on the frequency of trainer intervention. This method proved unsatisfactory as the mowing season progressed. During this time, the staff-client ratio increased and lower functioning individuals joined the crew. It became necessary for staff to monitor the behavior of more than one client at a time, making continual feedback impossible. In addition, it became apparent that because of the nature of the task (cutting grass), it was difficult to intervene before the error occurred. An error was defined as an uncut strip of grass 1" x 1' or greater. The number of errors per minute were recorded as a means of recording data consistent across all mowing areas.

Once a crew member was able to mow areas without trainer intervention, the focus of supervision shifted to increasing work pace. Stopwatches were provided for the workers. Using these, the time required to mow each section was recorded. This activity reinforced the idea of working quickly as did comparison with previously recorded times. Positive verbal reinforcement from the staff was supplied for completion of assigned tasks. Clients were paid an incentive wage of $.90/hr. for all hours of training and lawn maintenance work.

Ancillary activity were also performed by the crew. Each crew member assumed responsibility for daily routine maintenance of the equipment used by him. These tasks included: checking and filling gas and oil, cleaning the equipment, charging the batteries on the pushmowers, etc. All workers participated in the daily loading and unloading of equipment at the Institute and at the mowing sites. Among these tasks were placing and securing mowers on the trailer, and the reverse of these operations, raising and lowering the trailer ramps, and providing gas, oil, and water as needed for the day's work.

The lawn service program was designed to operate four days a week from 9 a.m. to 2:30 p.m. Staff to client ratio initially was 1:1 during training on equipment operation. It was then decreased to a ratio of 4 crew members to one supervisor. In the months of August and September, the crew often did not operate all four days per week. Rain on work days, grass still wet from earlier rains, and slow growing grass due to lack of water determined the amount of work and time available to complete it. Equipment breakdowns further effected the number of individuals working at any given time.



Based on the experience of the VSE Project, outdoor contracted yard maintenance may represent both a highly financially rewarding and normalizing experience for developmentally disabled adolescents and adults. While the caprice of weather and equipment failure proved bothersome, it was clear that there was more of this type of work available to the project than could ever be managed with our limited number of clients and limited treatment day. Project results would suggest that lower functioning persons can indeed learn the safe operation of industrial-grade service equipment and that such work can be taught and subsequently performed by such citizens.

Table 4: Lawn Service Supervisory Interventions

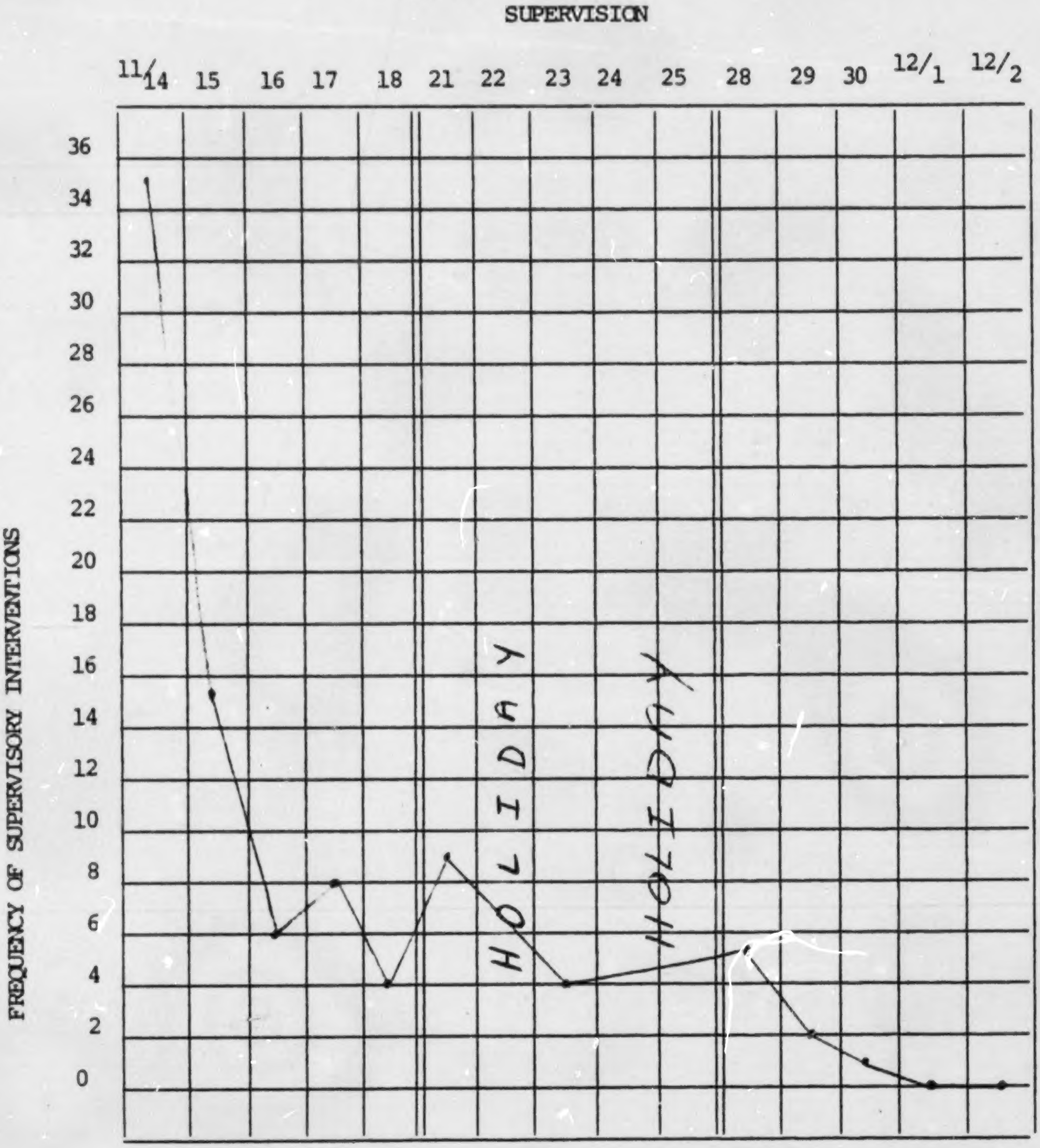
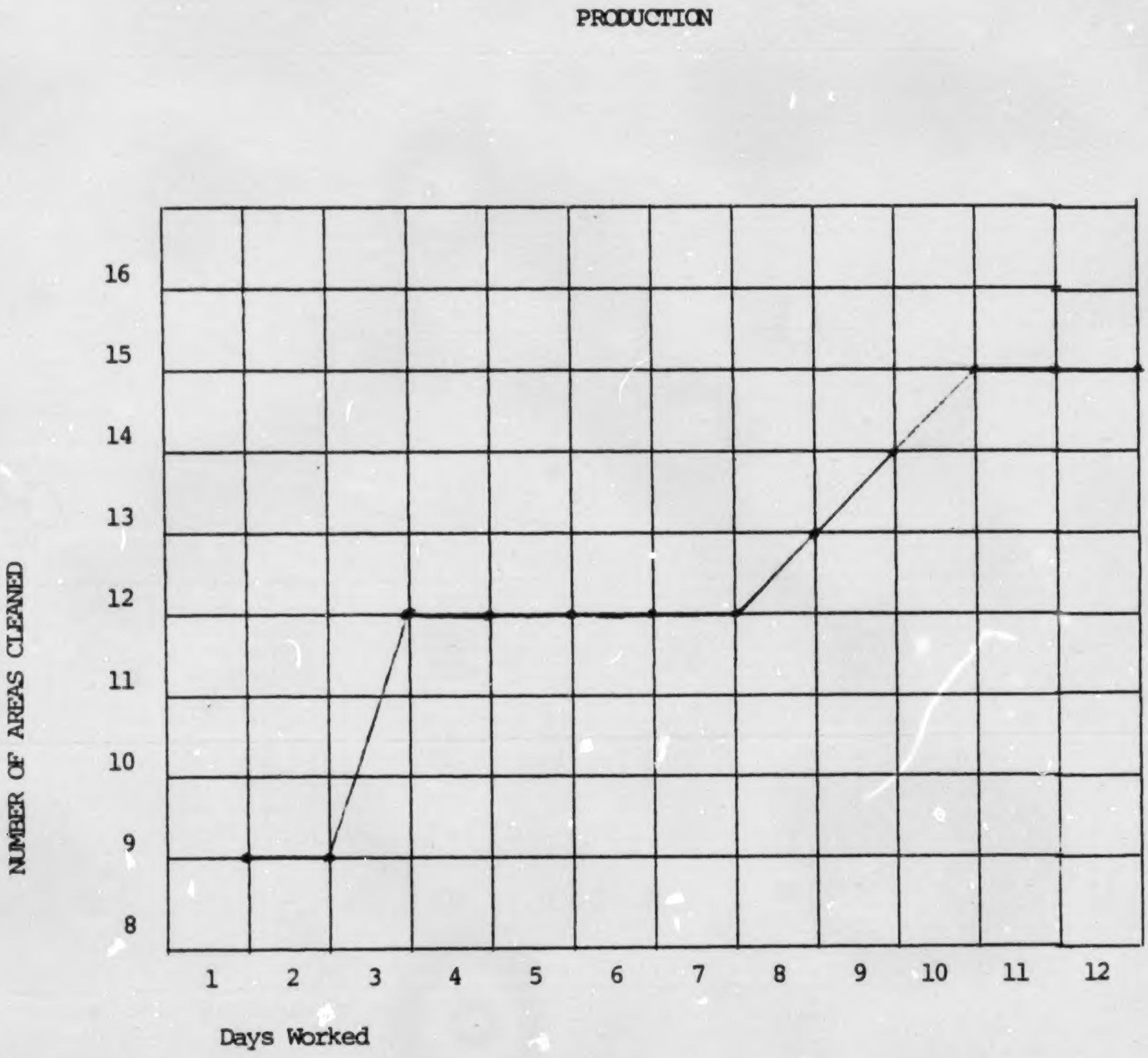


Table 5: Number of lawn areas cleaned over a 12-day period



CHAPTER VII

COMPETITIVE TRAINING AND PLACEMENT

A. INTRODUCTION

During the initial stages of the VSE Project, staff effort was directed toward teaching developmentally disabled clients complex work behaviors in sheltered or semi-sheltered environments. Earlier investigations had shown that lower functioning, and in many cases higher functioning developmentally disabled persons were engaged in stultifying and low paying (sorting, simple assembly, weaving, etc.) sheltered occupations if they were fortunate to be involved in work at all. The VSE project wanted to demonstrate that lower functioning clients could be taught complex work tasks and subsequently produce these tasks at acceptable rates without significant error.

Over the months, as clients worked successfully at using power tools to assemble flush valves, wire harnesses, and pump liners, and worked equally successfully in using industrial grade lawn equipment in service contracts with Ann Arbor agencies, it became clear that certain clients could be trained to survive even more rigorous environments.

Survival of the lower functioning worker in competitive employment is made difficult by these factors:

1. The learner requires systematic training, reinforcement for approximations, and feedback on performance.
2. Many "training programs" in industry are unstructured, highly verbal, and many jobs are not task analyzed.
3. The production environment may often require the worker to learn new skills on-the-job.
4. The social environment on-the-job may require the worker to make keen distinctions between a co-worker's joking and serious

behavior.

5. Reinforcement for rapid, error-free work may not be provided frequently by management and may actually be discouraged by fellow employees.

These conditions are unlike (hopefully) those found in better sheltered environments. Thus, it was hypothesized, in placing lower functioning clients competitively, the following conditions would have to be met:

1. Determination of the exact requirements of the job, including:
    a) locations of job
    b) clothing requirements
    c) starting time
    d) break periods
    e) level of supervision
    f) specific work skills
    g) specific work rates
    h) sequence or "flow" of work
    i) quitting time
    j) constancy of assigned work (is the worker expected to perform tasks on short notice for which he/she has not been trained?)

The above conditions led to the development of a competitive work training model forlower functioning persons.

B. TRAINING MODEL

The model used in training for competitive employment consisted of three elements. First, it was necessary for the VSE staff trainer to learn the job as it is performed in the placement job site in order to task analyze the operations in preparation for client training. Second, the client was provided specific simulated skill training on the tasks comprising the competitive job he was being prepared to assume. Third, after meeting criteria in simulation, close supervision was provided on-the-job by VSE staff. Project supervision supervision was faded as quickly as possible while the on-site supervisor's role increased to one-hundred percent.

C. CUSTODIAL TRAINING

Sixteen hours of training were regularly required of all employees entering University custodial positions. Two project staff members joined a custodian training group to prepare for future training of clients. All routine office, hallway, and restroom cleaning tasks, equipment use and maintenance, and ancillary activities such as filling out time cards and mixing cleaning solutions, as well as supervisory expectations, were learned by the staff members at this time. The complete and specific requirements for satisfactory performance in Custodian I positions were acquired so that clients could be trained to meet these precise demands. (Appendix 23)

Task analyses were written for 46 objectives and each objective was broken down into small steps with descriptors of manipulations and discriminations when appropriate. The task analyses were written directly onto the coding sheets (See Appendix 24).

Using equipment loaned by the building services department, Institute-based client training commenced in a simulated work environment. The duration of this training phase lasted 3 weeks for each individual. An individual training procedure plan specified the behaviors to be learned and the format and feedback best suited to the individual trainee.

Each client received 1:1 training and success criteria on each objective were set at 6/6 correct trials on 2 consecutive days. Progress notes were written weekly. During training on each objective, data was collected on client performance on each trial. Client performance was coded using an "M" for a manipulation error, an "O" for an order error, and a "D" for a discrimination error. One hundred percent accuracy was required.

Once criterion was achieved on the individual objectives in the chain of tasks comprising office or restroom cleaning the trainee entered the supervisory phase of training. At this point the trainer's concerns shifted from quality performance on discrete tasks to quality and quantity performance on a series of cleaning sites throughout a building. The clients were trained to perform all routine cleaning tasks in an assigned area and then to continue to clean the next assigned area while developing a satisfactory work pace. Positive verbal reinforcement as well as other techniques were employed. Once the desired behaviors were established, supervisory intervention was faded rapidly.

The trainee was hired at the Custodian I level following 3 weeks of Institute based training. A project staff member accompanied the trainee as he began full-time on-the-job employment. The worker received additional training in tasks that could not be simulated at the Institute, assistance in learning his way around an unfamiliar building, in establishing his nightly and unvarying routine, and in increasing his work pace. The trainer also acted as an informal model for the new employee in interactions with co-workers and supervisor and in their interactions with the new worker. Initially all supervision needed by the new employee was provided by project staff; however, VSE supervision was faded as quickly as possible until supervisory responsibility became the employer's. The frequency of supervisory interventions was recorded nightly during this phase of training. Appendix 25 When the frequency of interventions decreased to zero on 2 consecutive days, the custodian had demonstrated his competence at independently meeting the job requirements and project supervision was totally withdrawn.

D. RECOMMENDATIONS

As was noted elsewhere in this document, it is possible to teach lower functioning adults complex work skills under conditions of appropriate training and supervision. Utilizing a task analysis approach, modeling, verbal cues, positive reinforcement, and ample opportunity for rehearsal it would appear that lower functioning persons with uncomplicated mental retardation may be able to survive certain competitive environments.

In the case of clients trained competitively under the VSE project, great care was exercised in ensuring that training staff were themselves trained in the custodial tasks and that the task simulation at the Institute prior to work placement approximated the social and work demands of the ultimate work setting. By systematic and unvarying training, by the use of successive approximation, and by rapid trainer fade, trainees were taught to survive the simulated environment. Inasmuch as the simulated environment approximated the demands of the naturalistic, it was a comparatively easy transition to the actual work environment.

Workers trained utilizing the above techniques present some unusual characteristics while on-the-job. The clients have been taught a sequence of behaviors over many trials to reduce the complexity of stimulus discriminations associated with the job. For example, all clients were taught that, upon entering the work environment, the worker went to the closet and retrieved a mop and bucket which was filled to a certain level with a hose provided for that purpose. Attempts to have the client work out of sequence meet with confusion and resistance on the part of the worker. For example, a supervisor not familiar with one of the project's clients attempted to have the worker clean a wet spot in the south portion of the hall upon starting work while the client had been trained always to begin in the north. Upon being told to clean the south wing the worker agreed . . . but went to the north section as usual. The supervisor returned to find the client working toward the affected area, but it was obvious that a directive had been ignored. Fortunately, the worker's regular supervisor appeared in time to avoid a potentially punishing situation.

Additional research is needed to determine the nature of competitive environments which developmentally disabled persons can be taught to survive. The preliminary work of the VSE project would suggest that highly trained workers, assigned to unvarying tasks, under conditions of exceptional and reinforcing supervision may be able to survive, and indeed thrive, in certain competitive environments. Concurrent with these questions it will be necessary to research the parallel problems of teaching lower functioning citizens to manage comparative affluence.

FOOD SERVICE TRAINING

One client was trained and employed as a dishwasher in a restaurant. All training in this case was done on the job site because it was not possible to readily simulate a commercial dishwashing set-up at the Institute. In all other aspects, task analyses, training, supervision, and successful placement were achieved following the same procedures as detailed in custodial training (Appendix 26, 27 & 28).

CHAPTER VIII

COUNSELING SERVICES

A. INTRODUCTION

Counseling services were a vital aspect of the VSE Project since the habilitation efforts of the project often produced major changes in a disabled person's life. Consider the mentally retarded adult who has spent the majority of his/her life in an institution. Comprehensive vocational training programs could transform this person into a productive worker and an active member of the community in a relatively short period of time. Effective counseling could help this "changed person" and his/her family to better understand and to cope more effectively with this radical transformation.

A number of authors have discussed the role of counseling and therapy in the habilitation of mentally retarded persons (See References). The list of references includes works from traditional counseling literature; that is, some of the citations deal with counseling non-handicapped individuals. These articles have been included because many of the traditional counseling theories and techniques are applicable and valuable in counseling mentally retarded individuals. While counselors need to develop additional skills in order to effectively serve disabled persons, they can benefit from having a thorough understanding of the range of all counseling theories and techniques. The counseling program of the Vocational Services Component at the Institute for the Study of Mental Retardation and Related Disabilities consisted of individual and group treatment as well as interventions with families, parents, and houseparents. This chapter will focus primarily on the group counseling aspect of these services. The intent of this chapter is to describe the group counseling system in a manner which will provide ideas for practitioners who are responsible for provision of therapeutic services to persons whose primary disability is mental retardation. In achieving this goal, the chapter will emphasize process and procedural issues as opposed to theoretical concerns. Topics which will be addressed include the following: spectrum of counseling services, issues discussed in group sessions, composition of the groups, procedural considerations, rules of the group, determining client goals, and innovative techniques. Several case examples will also be included in this chapter. It is not the intent of this chapter to provide a comprehensive manual for practitioners. Rather, this section will provide several concrete principles which have been found to be effective in counseling a special population.

B. THE SPECTRUM OF COUNSELING SERVICES

Many of the clients treated by the Vocational Services Component presented numerous and complex psycho-emotional and social problems. Consequently, the counseling groups were utilized to deal with a wide range of concerns. For example, many of the clients were extremely naive about the kinds of vocational alternatives which were available to them upon completion of the program. The staff provided the clients with a substantial amount of vocational information in the form of trips to factories and local businesses, sheltered workshops, slide presentations, and group discussions devoted specifically to educating the clients about the world of work and the opportunities available to them. Similarly, many clients had unrealistic vocational goals upon entering the project. During their evaluations, several clients spoke about wanting to be surgeons, novelists, or professional athletes. The group leader spent a considerable amount of time outlining the kinds of skills and qualifications required for these kinds of positions. In order to help develop realistic goals, the therapist frequently assisted the clients and their families to understand better the meaning of the person's disability and its relationship to vocational planning.

Other sessions were devoted to the development and improvement of interpersonal and social skills. At the beginning of the program, some clients had little experience in conducting a conversation. Through modeling and role playing exercises, clients were taught how to behave when speaking with another individual. The group leaders emphasized the importance of listening to the speaker, maintaining eye contact, staying on one topic and reducing interrupting behavior.

In addition, in order to further develop the clients' social skills, an assertiveness training program was incorporated into the existing counseling groups. The clients were taught how to express anger in an appropriate manner and were taught how to utilize assertive skills in a variety of social situations: dealing with an overprotective parent, coping with a manipulative salesperson, being called "a retard," and saying no when you did not want to do something. The latter was a particularly important skill for clients who had difficulty refusing the request of others because they were extremely concerned with being friendly with everyone. The assertiveness training was important for both the aggressive and timid clients. That is, aggressive clients seemed to benefit from learning how to express emotions in a less hostile and more mature manner. Timid clients, on the other hand, were encouraged to be more open about their thoughts and feelings.

Other social skills which were dealt with included sexual attitudes and behaviors, appropriate behavior for couples in the work setting, developing and improving work behaviors, attentiveness to task, compliance with supervisory requests, getting along with co-workers, and in some instances as with the lawn maintenance crew, learning to work as a cohesive team or unit.

Some clients seemed to benefit from what is typically thought of as supportive counseling strategies designed to improve their self-concepts. That is, the therapist spent a substantial amount of time emphasizing the kinds of gains the clients had made while enrolled in the program. This proved to be extremely helpful to clients who behaved as if they had very little self-esteem. The clients with little self-esteem and a poor self-concept were very frequently depressed and often became frustrated very easily in the work environment. Clients benefit immensely from positive reinforcement from their counselors when they are doing well in habilitation programs. Emphasizing positive aspects is an important principle for helping professionals who are frequently too problem oriented.

Another issue addressed during the counseling sessions was the development of leisure time skills. Upon entering the vocational training program, many of the clients had no hobbies or interests. One man could not decide what to do with a free half hour during the work day. When confronted with this question, he became quite perplexed and remained silent. The puzzled expression on his face illustrated his lack of leisure time skills or hobbies as well as his inability to make a decision. By utilizing modeling and role playing experiences clients were given assistance and practice in the development of decision making and problems solving skills. One of the decisions they were asked to make was related to this issue of what to do with free time. The clients decided to start a jogging group during their free half hour.

The development of leisure time skills can be an important part of a comprehensive habilitation program since a mentally retarded person who resides, works, and recreates, in a community is often more easily assimilated into that environment. While some sessions focused on ways to recreate, others were devoted to the resolution of some rather painful issues like the death of a loved one, the termination of a close relationship, stressful experiences in institutions, being placed in a group home, having little contact with natural parents, being depressed about being incapable of living independently, completing the vocational training programs and ending the relationships and ties the clients had established at the facility.

C. COUNSELOR CONSIDERATIONS

The group counseling at the Vocational Services Component was conducted by various staff while some sessions were led by joint therapists. The staff employed an eclectic approach which was based largely on behavioral principles, gestalt techniques, reality therapy, client-centered counseling theory, and interpersonal process theory. A "here and now" orientation was used and staff relied heavily on socio-dramatic techniques, modeling, and role playing exercises. In working with mentally retarded persons with poor verbal skills, it was extremely helpful to utilize non-verbal counseling techniques such as calling attention to the clients' body language and asking clients to act out how they are feeling (Passons, 1975).

In addition to knowing traditional counseling strategies, counselors serving mentally retarded persons must also be capable of functioning as coordinators of services for mentally retarded clients. That is, they must be familiar with community resources available and adept at working with other agencies. Ideally, counselors should also be familiar with interventions which involve their clients' parents and families. Many of the VSC's clients' problems emanated from the home environment. For example, one mother who recently suffered a stroke refused to allow her highly motivated mentally retarded daughter to attend the vocational program because she enjoyed having her daughter's company in the home. The two women spent most of their days knitting and watching television.

Another client frequently came to work quite angry because his alcoholic father was beating him. In another instance, a man had difficulty adjusting to the work environment because he stayed up all night watching television. His mother was unable to remediate this problem. In another case, a female client explained that her mother treating her like a child made it very difficult and in some ways impossible for her to be friendly with people enrolled in the program. That is, her mother refused to let her participate in any of the social activities that her co-workers were involved in. These case examples illustrate the importance of evaluations and interventions which include the family system.

D. COMPOSITION OF THE COUNSELING GROUPS

The groups consisted of from five to seven clients and the staff found it difficult to effectively manage any larger group. In addition, the staff found it beneficial to compose the groups in such a way that the group is heterogeneous with regard to IQ, sex, age, and personality types. That is, the therapist may want to include passive persons and aggressive persons in the same group. Heterogeneous groups enable the clients to learn from each other's strengths and weaknesses, for example, a timid client might learn to become more assertive after watching one of his more confident colleagues. In some instances, a high functioning socially adept client can serve as a model or "peer counselor" for less socially adept individuals.

While the staff utilized counseling groups comprised of persons of different functioning levels, it was felt that it was essential to point out one of the disadvantages of this kind of population. A homogenous group comprised of individuals of a similar functioning level can make it easier for the counselor to structure activities which the entire group will find meaningful. In a heterogeneous group, some conversations will be relevant to some of the participants but irrelevant to others. Thus, counselors must use a great deal of discretion and judgement when composing the populations which will comprise counseling groups.

E. PROCEDURAL CONSIDERATIONS

Each weekly counseling session lasted forty-five minutes and the size of the groups ranged from five to seven people. All of the individuals enrolled in the vocational training program were required to attend the counseling groups. The sessions met at the same time each week. The staff found it beneficial to hold sessions at the same time every week as the clients, like other people in therapy, seem to become accustomed to having a specific time devoted to the ventilation of their feelings. In addition, work supervisors who were in charge of the clients could explain to clients that they would be given an opportunity to discuss a particular problem during a predictably scheduled weekly counseling session. As was stated in the introduction of this chapter, all of the clients attended individual counseling sessions in addition to the group sessions. The frequency of these meetings was determined by the severity of the person's problems.

Each group session commenced with a brief relaxation exercise during which the clients were asked to close their eyes and breathe deeply for about 2 minutes. The exercise was initiated in order to help the clients make the transition from work environment to counseling environment. The counseling sessions were held in a room adjacent to the workshop that was used exclusively for counseling groups. it is advantageous to utilize a room which is not associated with other habilitation activities as this helps the clients associate a specific room with specific kinds of tasks. Holding counseling sessions in a room which is used for another activity such as recreation or special academics is not advisable.

The groups were governed by two major regulations: First, only one person was permitted to speak at a time. Second, the group was required to restrict their conversation to one topic at a time. If a group member was discussing a problem related to the work environment, the rest of the participants were required to restrict conversation to this issue or a closely related one. If a client switched topics or interrupted another member, the therapist would either ignore this behavior or simply remind the client of the rule which they had broken.

F. CLIENT GOALS

Initial goals for counseling sessions were determined by recommendations which were generated by the interdisciplinary evaluation of the person prior to enrollment. Additional goals were generated as the Vocational Services Component staff became aware of particular clients' concerns. Many clients behaved quite differently after spending several weeks in the program learning to perform complex work which many of them thought they would not be able to master. For example, clients who appeared to be very shy and withdrawn initially began to interact a great deal with their co-workers after a few weeks. Others who were very involved in social and recreational activities began to be very concerned with their jobs and less concerned with diversions.

Some typical client goals included the following: reducing the frequency of crying behavior, increasing production rates, reducing the frequency of temper tantrums, improving assertiveness skills, learning to respond to a simple question, learning how to deal with criticism, learning how to cope with anger, increasing the number of positive statements one is capable of saying about oneself, increasing the knowledge of vocational alternatives available, and improving self-concept and self-esteem. These goals were stated and evaluated in typical behavioral fashion. The author found it helpful to utilize charts and graphs as a way of measuring clients' progress. These charts and graphs are similar to those described by other VSC staff members elsewhere in this Report (See Appendix 30). Additionally, Gottman and Leiblum (1974) have suggested several kinds of graphs which ae helpful in evaluating client progress in counseling and therapy.

G. INNOVATIVE TECHNIQUES

The staff utilized music and video tape playbacks during some counseling sessions. Music was used as a catalyst to initiate discussions about different moods and feelings. Higher functioning clients were able to identify images which they associated with different types of music. For example, a blues ballad helped initiate a conversation about things which made people feel sad. Similarly, a jazz composition reminded one of the clients of his parents' recent trip to Mexico.

Video tape playbacks were used to illustrate appropriate social work related behaviors and were also used to illustrate client growth. (e.g., "Sally did you notice how you head is down in the tape from a few months ago. Now you sit with your head up. I wonder if it is because you feel better about yourself now?").

On several occasions the clients were given the opportunity to run the groups themselves. This is an effective way of increasing client responsibility and of determining how well clients have learned various social skills developed during the group sessions. The therapist would explain to the client that they would be responsible for conducting the counseling session without his assistance. After stating this, he would have to leave the room and monitor the counseling session from the adjacent observation area. Behaviors and processes which the author noted and recorded data on included: the group members' ability to stay on one topic at a time, the frequency of interrupting behavior, the group members who continually emerged as leaders, the persons who contributed little to the group, the amount of time the clients were able to manage the group and maintain a focus on recognizable counseling goals, and the content of the sessions.

During this exercise, the clients tended to implement the same kind of format utilized by the therapist when he ran the session. That is, the clients commenced with a brief relaxation exercise and then focused on problems related to their vocational training. As might he expected, high functioning socially adept clients usually took command of the sessions. Typically, the "client-counselors" were capable of maintaining order in the group for a maximum of 20 minutes.

As was stated earlier, this exercise can serve as a tool for assessing client progress in functioning in social situations, since counseling groups may be thought of as a forum in which clients can practice and improve upon social skills. This exercise also illustrates the feasibility of training higher functioning mentally retarded persons to serve as peer counselors or para-professionals for lower functioning individuals. Craighead and Mercurtoris (1973) have illustrated the feasibility of this kind of plan.

H. RECOMMENDATIONS

As has been illustrated in this chapter, counselors who are providing services to mentally retarded persons can benefit from having a wide range of helping skills. Specifically, counselors should be knowledgeable in individual, group, as well as family treatment. Many of the Vocational Services Component's clients presented problems which required a substantial amount of all three types of therapy. It is also recommended that counselors become familiar with techniques and strategies which do not rely exclusively on verbal communication; that is, counselors must familiarize themselves with non-verbal communication, body language, and role-playing exercises which do not rely heavily on expressive and receptive language. Counselors may also want to explore the appropriateness or the value of music therapy and art therapy as viable tools in the counseling and habilitation of mentally retarded persons.

Counselors must also be prepared to develop and implement strategies which transcend the concept of changing the individual. In other words, counselors must consider the value of strategies which consider the person's total environment: their family, their houseparents, their leisure time activities, their vocational placement, the organizations of which they are members, and all other agencies which are involved in providing services to the person.

Counselors should also possess a great deal of patience if they want to be effective in their helping role with mentally retarded persons. Many of the clients served by the Vocational Services Component required a substantial amount of time and energy in order to resolve what would appear to be a very basic issue to a non-handicapped person.

The author recommends that counselors develop a perspective which will help them set realistic and attainable goals for their mentally retarded clients. Setting unrealistic goals will result in frustration for the clients as well as the counselor. Where low functioning clients are concerned, counselors may have to view learning to sit in a chair for the duration of even a brief counseling session as a significant accomplishment.

Finally, the staff would encourage counselors to recognize the importance of encouraging mentally retarded clients to assume responsibility for their actions and lives. A counselor who can assist a client in making a decision instead of making the decision for the client will help prepare the mentally retarded person with the kinds of skills needed to adjust to society's demands.

CASE STUDY 1

Tim frequently became angry when asked to attend his weekly group counseling session and often exhibited similar behavior when the workshop supervisor asked him to perform work he did not want to do. The counselor felt that Tim's inability to comply with rules and supervisory requests was one of this client's major problems. Moreover, this is the kind of problem which would prevent Tim from being placed in a competitive or sheltered job.

Because Tim was motivated to complete the vocational program and obtain a job, the counselor explained that he must attend the counseling sessions because they are a part of the program. If Tim attended the counseling sessions and continued to do his job well, he was told that he had a good chance of being placed in the kind of job that he wanted. If he failed to attend three group sessions the counselor explained that he would be dropped from the program.

After these terms were established, Tim agreed to attend the group counseling sessions. During these sessions, the counselor frequently addressed Tim's difficulty in following rules. At one point, the counselor confronted Tim with the fact that he was capable of doing his job but sometimes would refuse to follow rules in order to get attention from co-workers, houseparents, and staff members. In order to ameliorate this problem, the counselor spent a substantial amount of time in helping Tim develop more constructive ways of getting attention from others. Tim was encouraged to work on controlling his temper and reminded the supervisory staff and the client's houseparents of the importance of praising Tim whenever he was performing well in the shop. After two months of these kinds of interventions and weekly individual counseling sessions, Tim's work behavior improved substantially.

CASE STUDY 2

The group counselor learned through one of the staff members that two of the VSC clients were found necking in one of the corridors at the Institute. The staff person was quite disturbed by this behavior and she asked that the matter be addressed by the VSC staff. During one of the group counseling sessions, the therapist described this complaint with the counselees. The persons involved initially felt that it was their "own business." The therapist agreed that the clients were free to do what they wanted. In addition, he stated that it is alright to show your feelings to another person through physical gestures. However, the counselor explained that work was not the appropriate place for this kind of behavior. The counselor explained that while he enjoyed kissing women, he did not engage in this kind of behavior while he was at work.

The two clients agreed that work was not the appropriate place for this behavior. The counselor asked the clients if they thought that it would be possible for them to see each other outside of the work environment. With some guidance and assistance from the VSE staff, these clients were able to get together outside of the work environment. This couple was also provided with "relationship counseling" sessions which were conducted cojointly by male and female members of the VSC staff.

The staff recognized that sexuality is a volatile issue among many parents and community groups involved in the care and maintenance of the mentally retarded person. The case example presented is not seen as a solution to this problem since many mentally retarded persons would have a great deal of difficulty in maintaining a relationship with a member of the opposite sex outside of the work environment because parents and houseparents may disapprove of this kind of behavior. In some instances, this kind of relationship would be difficult to sustain because of the lack of mobility skills on the part of the retarded person. In summary, the issue of sexuality is intimately related to the whole concept of normalization and this author believes that it is a concern which is now beginning to receive a substantial amount of attention by persons involved in the habilitation of mentally retarded persons.

CASE STUDY 3

Barbara appeared to be quite alienated from the other clients when she entered the training program. During her first month in the program, Barbara often appeared to be depressed. The counselor felt that this feeling may have been related to Barbara's difficulty in relating to her co-workers.

During one of the group sessions, the counselor asked Barbara if she felt rather lonely in the work setting. Barbara explained that she felt as if "no one knew her" and she said that she found it difficult to engage in activities with other clients. The therapist asked Barbara if she would like to accompany some of the clients when they went out to lunch on Monday. Other group members expressed their desire to have Barbara join them. Barbara became quite upset and explained that she could not join them because her mother did not want her to go to town with the other kids because she was afraid that she would get into trouble. The other group members reminded Barbara that they "were not kids" and insisted that they "do not get into trouble when they go to lunch."

Barbara's remarks indicated the need for interventions with Barbara's parents. The counselor felt that her parents' infantilization was in some ways responsible for Barbara's inability to establish relationships with other people.

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CHAPTER IX

INSERVICE TRAINING

A. INTRODUCTION

The Vocational Services Expansion Project was designed to provide a model of adult vocational services for severely handicapped developmentally disabled individuals. Research products over the years have demonstrated that this population can perform complex work, yet most direct service agencies continued to offer adult programming that can best be characterized by the expectation of low performance. Thus, despite a proliferation of research and demonstration articles in popular and scholarly journals, the condition of the developmentally disabled adult in the community remains largely the same as it was in the 1950's. Given these conditions, the staff of the Vocational Services Expansion Project proposed that staff serving adolescent and adult developmentally disabled persons be given access to practical research products by means other than journal reports. Accordingly, the Vocational Services Expansion Project offered U.S. Region V, in particular, and all of the United States, in general, a very active staff development training program during the three-year life of the project. (See Appendix 31 for list of agencies served.)

B. THE NEED FOR INSERVICE TRAINING

It is both a sad and strange paradox that populations often requiring the administrations of a highly skilled and sensitive professional staff will receive services from individuals who are caring, but largely ignorant of vocational and social habilitation technology. The absence of competent staff to serve the developmentally disabled population is a problem on par with the lack of facilities needed to serve these citizens within the next five years. While there are numerous reasons for the lack of qualified staff, the number of causal factors are prominent:

1. the lack of a conceptual model for the maintenance of the adult developmentally disabled person in the community--most agencies are still unsure of whether developmentally disabled adults should be entertained, restrained, or put to work. Currently, most agencies lean toward entertainment. Given the tendency toward entertainment, staff skills in recreation and diversions are highly valued.
2. Insufficient funding--community support dollars for maintenance of developmentally disabled persons in day and residential programs is often at the bottom of local funding priorities. Thus, in the social service marketplace, highly skilled individuals are enticed elsewhere.
3. Low level staff competency requirements--closely related to the second point is the third point concerned with who is able to work with developmentally disabled adults. In the experience of the VSE staff most agencies heads will retain those staff who are willing to work for reimbursement at near poverty levels.
4. Absence of support for on-going inservice training--at the local, state, regional, and national level, there is an astounding lack of dollars for the development of long-term inservice training program on topics related to the vocational and social habilitation of developmentally disabled adults. In the experience of the VSE staff, while most agencies and their administrative and line staff are not competent habilitation specialists, they are not resistant to training and, in fact, are desperately in search of programs that will upgrade their

skills and increase their value to the clients they serve. As testimony to this, it should be noted that all VSE monthly training seminars and three-day limited enrollment preceptorships on the topics of assessment, adjustment, training, and placement of developmentally disabled adults were filled to capacity for the academic year within one month of notification to agencies of the availability of such training.

5. Staff turnover--closely related to point four is the phenomenon of rapid and extensive staff turnover in commnity agencies serving the adult developmentally disabled person. In 1975 and 1976, the Vocational Services Component was the recipient of an innovation and expansion project funded by Michigan Vocational Rehabilitation Services (76-10508-G1). The Mobile Diagnostic Project was funded to relate to targeted adult activity and work activity centers, and sheltered workshops throughout the state of Michigan to provide staff with on-going inservice training on topics related to the vocational habilitation of lower functioning clients. At the end of the second year of the project, the Final Report notes that, of 18 agencies served, most experienced at least an 80% turnover in line staff. Given this high staff turnover, for whatever reason, it is apparent that the development of an on-going inservice training program is essential.

C THE VSE PROJECT STAFF DEVELOPMENT MODEL

Previous to the development of the VSE inservice training program, the staff contacted administrators and line personnel from adult activity centers, work activity centers, sheltered workshops, residential, and mandated school programs to enlist their ideas on the elements of an ideal training session. Most people interviewed suggested that traditional inservice training (e.g., lecture) was boring at best and that, not infrequently, the content of such "inservice training" ended up being somewhat wide of the mark to the needs of the line personnel. To avoid the problems of boredom and to make the training relevant, the VSE staff decided to minimize lectures and to use the experience gained in the operation of the VSE experimental workshop as the basis for content. In operating an experimental workshop which offered intake, assessment, adjustment, training, and placement services to developmentally disabled persons, the staff of the VSE project encountered many problems of colleagues serving similar populations in the field. Issues of transportation, interagency cooperation, client maladaptive behavior, staff turnover, and revising parental expectations for client performance were problems that were relevant to individuals serving populations with special needs. As an extension of this philosophy, therefore, the VSE staff designed staff training materials that minimized lectures and maximized simulation, supervised clinical experience with developmentally disabled clients, fedback to participants on performance, and the provided "make and take" exercises which can be used by the trainees in their home setting.

Two types of training programs were offered by the VSE project, monthly training seminars and three-day limited enrollment preceptorships. The monthly training seminars were offered once a month to up to 30 individuals on the topics of intake, assessment, adjustment, training, and placement of developmentally disabled persons in the community. Given the broad range of topics and the limited time for presentation of content (9 a.m. - 3:30 p.m.), staff were expected to achieve awareness level competencies in topics brought to their attention. Presentation of all material made extensive use of video tape and distribution of materials which could be reproduced in the field. Additionally, observation of the VSE clients in the experimental workshop and simulation (in which one trainee would take the role of a client and the other trainee the role of a staff person) were also employed. It should be noted that, while the VSE staff provided inservice training to a very large number of individuals throughout U.S. Region V, it was clear from the onset that the staff could have offered training seminars on a weekly basis and still not have met the requests for such services.

Many individuals who participated in the awareness level monthly training seminars subsequently elected to enroll in limited enrollment three-day preceptorships on specified topics related to the vocational habilitation of the developmentally disabled adult. Unlike the seminars, preceptorships featured supervised clinical practice with developmentally disabled adults in specified training areas. Over a three-day period participants would be provided with theory, simulations, and supervised hands-on experience with clients from the VSE experimental workshop. Preceptorships were offered on the following topics:

1. Intake and assessment
2. Adjustment and counseling
3. Task analysis, training, supervision

Over the life of the VSE project, topics were rotated by the month so that individuals who had elected an intake and assessment preceptorship in one month could access adjustment and counseling in another.

In preceptorship training, enrollment was limited to no more than six individuals from three agencies. No agency was allowed to send a solitary trainee as, in the experience of the VSE staff, a single individual who returns to an agency full of enthusiasm and who receives no support for same, soon loses the energy associated with feelings of competence. Having at least two individuals from an agency sharing the same convictions increases the probability that content acquired will later be applied.

Participants arrived on the night before the first day of training for a values clarification meeting with the VSE staff. In earlier preceptorships the staff's first encounter with trainess was at 9 a.m. on the morning of the first day of training. The VSE staff quickly learned that not all line staff shared VSE's value of client work, training structure, and normalization. By holding a values clarification session on the night before training commenced, the staff was able to identify individuals who, without values clarification, might prove an impediment to three-day process. This is not to suggest that the VSE staff attempted to change participants' values; rather, the clarification session attempted to have trainees surface their values for themselves and others, thus avoiding resistance and hostilities for reasons that would otherwise remain sub-rosa.

The actual training experience began with a tour of the facilities and an overview of the activities of the Vocational Services Component. After these preliminary activities, the trainees were immediately introduced to training and such activities continued for three days. An example of a preceptorship training schedule is available for inspection in Appendix 32.

D. RECOMMENDATIONS

The experience of the Vocational Services Expansion Project staff with trainees throughout U.S. Region V and elsewhere in the United States has suggested that staff in adult facilities are largely untrained to provide normalizing adult services for developmentally disabled citizens. However, these staff are not resistant to training and when training is offered, they are anxious to participate in same. Additionally, once trained, these staff are fully capable of implementing what they have learned. Therefore, in recognition of the high staff turnover in adult facilities and the low skill level of most staff in adult facilities, it is recommended that either Rehabilitation Services Administration or the Developmental Disabilities Council at the state or regional level institute a long-term inservice training capacity for personnel serving developmentally disabled adults at the community level. It is also recommended that college and university special education and rehabilitation counselor training programs begin to prepare personnel at the preservice level for competence to deal with the vocational and social needs of the adolescents and adults in a work oriented society.

CHAPTER X

THE FUTURE

A. PREPARATION OF THE FAMILY FOR THE DEVELOPMENTALLY DISABLED CHILD'S INDEPENDENCE

While much has been written concerning assisting the family in accepting the birth of a handicapped child, little has been published that suggests a family role in preparing the handicapped child to assume a responsible work role in some sheltered or competitive industry in the future. The experience of the Vocational Services Expansion Project would suggest that parents can be a major assist or a fundamental barrier in moving the developmentally disabled person toward vocational and social independence (See Chapter VIII). Parents that

are fearful for their child, overprotective, or who harbor feelings of guilt concerning their son or daughter may in fact sabotage training and placement programs that would make these individuals less dependent upon the parents for support and nurturance. Parents of young developmentally disabled children need both affective and cognitive experiences that will make them supportive of their children's growth.

It is recommended that parent education programs include in their content information about the high level of productive activity achieved by severely involved adolescents and adults. Of necessity this will also require that the child-oriented trainers of parents also familiarize themselves with the needs and potential of the older developmentally disabled child so that information can be passed on to parents with accuracy and sensitivity.

Parent education activities may also serve as a forum for parents to examine the status of contemporary adult programming in their community. As has been suggested elsewhere in this document most community adult programs would appear to be deficient in terms of quantity and quality of service. Parent energies may be channeled most effectively by making them aware of the discrepancy of (1) what their child could be trained to be as an adult and (2) what is now required/available for adults with special needs in the community. The same parental energy that produced mandatory education acts in fifty states will also produce changes in the next environment that developmentally disabled persons must occupy.

While parents are working with community agencies to upgrade the level of vocational and social service available to developmentally disabled children the family should itself be providing the developmentally disabled child with experiences and expectancies of work responsibility. In the socialization process of the non-handicapped child the family and community begins to exert influence on what the child is to be in future years. Parents often refer to a child's vocational calling as a fait accompli (e.g., "This is my son the future doctor . . .") while the community can apply a subtle pressure of its own through school and other institutions.

In the experience of the VSC staff, parents and the community do socialize developmentally disabled children, but with the expectation that these children will accomplish little. Thus while other siblings in the family are required to assist in the cleaning of their rooms, in the preparation of meals, and are given other household chores the developmentally disabled sibling is often not assigned . . . and often not even permitted . . . to take part in the work of the house.

The maintenance of the house can provide a developmentally disabled person with early and positive work experience. Assisting in the making of beds, washing laundry, helping in the kitchen, yard work and other tasks are easily within the capacity of most developmentally disabled persons and would serve to provide the child with a cognitive construct of himself/herself as a worker and also give the family experience with their child as a worker.

Although working with children and families of same was not within the province of the VSC grant, a number of families with young developmentally disabled children were known to the staff. These families had had the benefit of excellent counseling shortly after learning of their child's disability and, unlike the guidance provided to many families, were not advised to despair and sequester the child. Instead these families were advised to be mindful of their son's and daughter's limitations while simultaneously working on treating the child like any other. Given these high expectations the children were routinely involved in the social, recreational, and decision-making activity of the family and, as would be expected, these developmentally disabled children functioned at remarkably high levels of adaptive behavior. Again, this is not to suggest that these children were "cured" by early intervention and high family expectation; rather, these children were exceptionally well trained and both the child and the family had a set toward accomplishment rather than failure.

In the future, therefore, parents will be taught that the inability to attend university or work at a skilled trade does not constitute an inability to participate at some level in the work of the community. Parents will expect mandated school programs to provide their child with quality pre-vocational and vocational training and will further expect continued training and maintenance services from the community mental health center and the bureau of educational rehabilitation services. Families, for their part, will be expected to support and further the training efforts of community agencies both through work assignments at home, by reinforcing the student's participation in work training programs, and by assisting in the placement and maintenance process.

B. AN ALTERNATIVE TO THE ADULT AND WORK ACTIVITY CENTER: THE TRAINING CENTER

Vocational or pre-vocational services to developmentally disabled individuals are usually provided through the aegis of three service delivery systems:

1. Adult Activity Centers
2. Work Activity Centers
3. Sheltered Workshop

An adult activity center, sometimes referred to as a day-treatment center, is usually defined as a facility with a developmental program of structured training for the most severely involved client. Adult activity programming would typically concentrate on eating skills, toileting training, communications, ambulation, and training in the most fundamental of skills. It is generally assumed that individuals in adult activity centers or day-treatment programs are severely involved to an extent that vocational training is of a low priority.

A work activity center is defined by the U.S. Department of Labor (Title 29, Chapter V, Part 525, May 17, 1974) as:

> Work activity center shall mean a workshop or physically separated department of a workshop having an identifiable program, separate supervision and records, plan and designed exclusively to provide therapeutic activities for handicapped workers whose physical or mental impairment is so severe as to make their productive capacity inconsequential.

Work activity center clients are expected to be higher functioning than adult activity clients. Work activity programming may include training in community survival skills, recreation, transportation training, training in basic academics, and work experience (up to 25 percent of the daily activity). Despite the higher functioning level of work activity center clients, their productive capacity is still considered "inconsequential."

A sheltered workshop, as defined by the U.S. Department of Labor (Title 29, Chapter V, Part 525, May 17, 1974) is considered to have the following elements:

> "Sheltered workshop" or "workshop" means a charitable organization or institution conducted not for profit but for the purpose of carrying out a recognized program of rehabilitation for handicapped workers and/or providing such individuals with rudimentary employment or other occupational rehabilitating activities of an educational or therapeutic nature.

Sheltered workshop employees are generally considered to be higher functioning individuals who may, with training, be capable of assuming competitive job responsibilities. Sheltered workshops may be either long term (where the client's limitations are such that competitive employment is highly improbable) or transitional (where the client needs a sheltered supportive environment for a limited period of time). To qualify as a sheltered employee, the client must be able to produce at the level of .50 of the productive capacity of a non-handicapped worker and must be paid at a minimum of one-half of the prevailing federal wage in effect at the time of employment. Adult and work activity center clients, if they work at all, are usually paid on a piece rate as it is assumed that they are incapable of producing at a sheltered level.

At face value, the concept of the adult, work, and sheltered workshop system is appealing. Theoretically, such a system should be able to provide social and vocational support services to clients ranging from the profound level of retardation to normally functioning individuals with acquired disabilities. However, there is evidence that the adult activity, work activity, and sheltered workshop system may constitute one of the most formidable barriers to the normalization of developmentally disabled persons.

As was noted in the Introduction to this Report, a recent survey of Michigan's adult service delivery systems (Lynch and Gerber, 1977) found a significant number of very high functioning individuals receiving services in adult and work activity centers (see Table 1, p. 4).

Table 1 results suggest a significant number of very high functioning clients are to be found in adult and work activity centers. Fully 29 percent of the clients in adult activity centers are functioning in the moderate to low mild range of retardation while more than 55 percent of the clients in work activity centers function in the same range. The results of the VSE Project would suggest that clients functioning at those level of impairment should, under condition of appropriate training and supervision, be able to approximate or exceed the productive capacity of higher functioning sheltered workshop employees. Assuming that clients served in Michigan's facilities are not unlike clients in other facilities throughout the United States it is possible to suggest that there are many high functioning developmentally disabled adults now receiving programming in adult and work activity centers designed to serve the needs of much lower functioning persons.

Despite the high functioning level of clients served in adult and work activity center programs, it was disappointing to find that program activities reported by these facilities were oriented toward crafts and diversions. As evident in Table 2 (p. 4) fully fifty (50) percent of the treatment day spent in activities that could be construed to be infantilizing for higher functioning developmentally disabled adults.

Last, and perhaps most serious, the Survey results (p. 38) suggest that many adult and work activity centers erect admissions barriers to acting-out and non-toilet trained individuals, the very citizens who are in need of the training which could be offered in the closely supervised settings ostensibly proffered by non-work-oriented facilities.

Survey results would also suggests (p. 31) that work oriented sheltered facilities are serving comparatively few individuals below the mild range of retardation. This finding is not inconsistent with the experience of the VSE staff in its travels to sheltered facilities in Region V, in particular, and throughout the United States, in general. The general public tend to use the term "sheltered workshop" rather loosely. Thus, school personnel frequently referred to the number of trainable or severely mentally impaired graduates who have left the mandated school program and ostensibly graduated to "sheltered employment." In fact, many lower functioning developmentally disabled persons may be graduating to the craft and recreation oriented environment of an adult and work activity center. In light of the proven work capacity of the developmentally disabled client, it is unfortunate that these individuals are under represented in sheltered facilities. However, it has also been suggested that contemporary work oriented sheltered workshop may be totally inadequate, as presently staffed and funded to affectively train and supervise lower functioning workers.

On the basis of the experience of the VSE project, it is recommended that the concept of adult activity center, work activity center, and sheltered workshop be completely eliminated as a conceptual model for the gradation of training and work demand for handicapped individuals. The concept of the adult work activity center carries with them a self-fulfilling prophecy that individuals enrolled in such programs are capable of only "inconsequential" work and, as a result, many individuals who would be capable of high levels of satisfying and productive enterprise are provided programming that is essentially infantilizing and which only contributes to the notion that developmentally disabled citizens are somehow vastly different than non-handicapped individuals.

Training centers of the future will accept all clients with developmental disabilities regardless of the clients functioning level or level of physical impairment. Clients that are not continent would be accepted routinely while acting out clients would be carefully screened and subsequently admitted to a special program. An intake process, similar to that described in the VSE end of project report, would provide training center admission's staff with concrete information about the client's behavior in specified settings.

Training centers would also have the capacity to provide vocational/social assessment services as well as adjustment, training, and placement services similar in many respects to the procedures employed in the Vocational Services Expansion Project.

Training centers, again, will be oriented toward training and the provision of environments in which lower functioning clients can engage in high level social and vocational activities. Included in such an array of service would be the provision of work environments that would (1) be more highly supervised than traditional sheltered workshops and (2) would provide work far more difficult than those now commonly found in sheltered environments (Lynch, 1977).

Work tasks (Greenleigh, 1975) and sheltered environment work tasks are both largely deficient in traditional sheltered environments (Lynch, 1977). Contract procurement for these environments seldom seem to be able to secure complex and remunerative work contracts. Problems of shipping and receiving and low expectation for client productivity and proficiency coupled with the lack of shop automation results in receipt of work tasks that are labor intensive and low paying. As sheltered facilities support staff through contract revenue, and as most tasks are low paying, sheltered facility workers are largely unsupervised. As has been noted elsewhere in this document the productivity of lower functioning persons is largely contingent upon the quality and quantity of supervision provided.

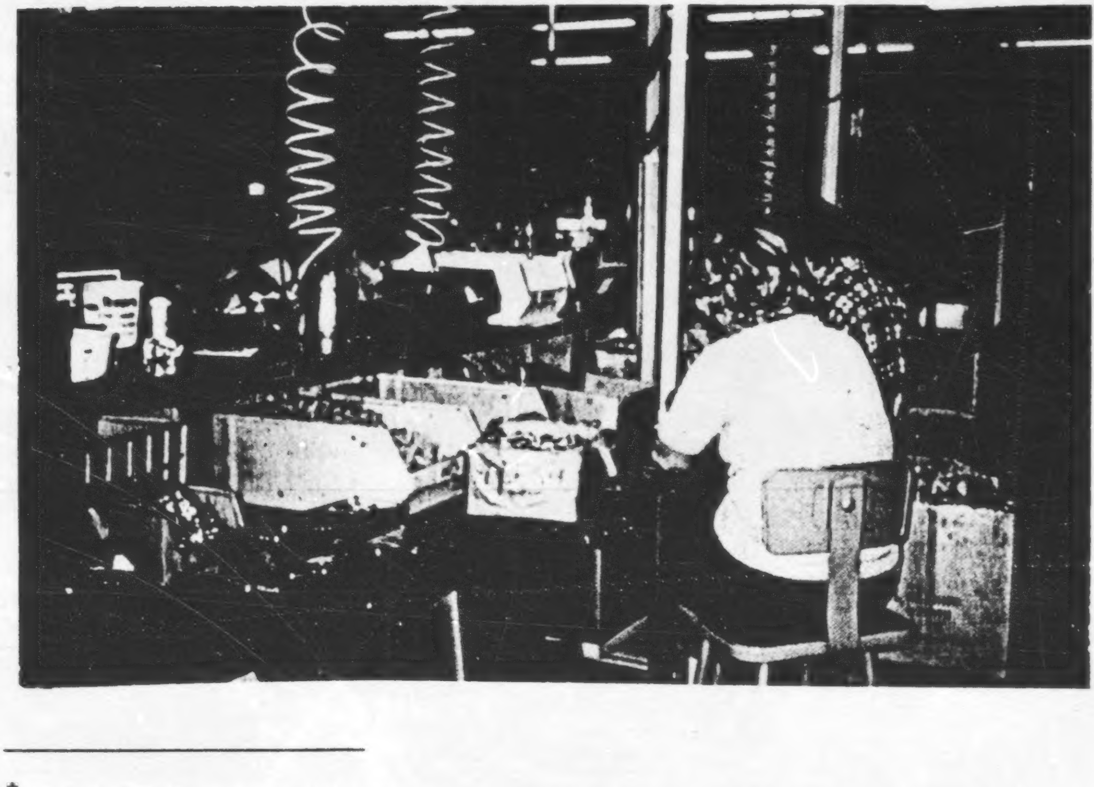
To circumvent this problem, training centers in the future will operate sheltered enclaves within industry (Lynch, 1977). In a sheltered enclave workers are trained to operate a section of the factory under the close supervision of a training centers staff member. This approach to the employment and supervision of developmentally disabled adolescents and adults avoids a number of problems usually associated with traditional sheltered employment:

1. Normalization--Sheltered workshops frequently are located in less expensive building far from industrial parks. Workers seldom are afforded the opportunity to mix with non-handicapped workers. In a sheltered enclave handicapped workers are part of the industrial work force and mingle at lunch times, at break, and at other times with workers who do not have developmental or other disabilities. This interaction enhances the possibility of modelling of new and more normalizing (however, not necessarily more desirable) behavior.
2. Work availability--Sheltered workshops have frequent layoffs and slowdowns as management casts about looking for subcontract work. Operation of a sheltered enclave ensures that the handicapped worker has access to the same work and wages available to the non-handicapped worker.
3. Wages--Wages in many sheltered facilities are as low as the complexity and challenge of work provided. In many cases it is more prudent for the disabled person to remain on SSI than to risk guaranteed income and valuable benefits on low-paying sheltered income. In a sheltered industrial enclave the client would have an opportunity to earn substantial income because of the nature of the work, union scale, etc.
4. Supervision--In most sheltered workshops supervision of client productive behavior is often limited to quality control. If a client does not produce at high rates with low error and acquire new tasks rapidly by highly verbal means he or she is often laid off. In short, most sheltered facilities are

operated like regular industry. Increasing the level of supervision would increase costs and decrease profit margins.* This fact has led both Greenleigh (1975) and Lynch & Gerber (1977) to question whether sheltered facilities can distinguish between their rehabilitation and production mission.

5. Task Stability--Subcontract turnover may be one of the greatest barriers to the employment of low functioning clients in traditional sheltered workshops.

New tasks must be acquired rapidly often without benefit of task analysis and systematic training. No sooner are the new tasks acquired and produced than a new contract with novel discriminations and manipulations is brought forth. As lower



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*As most sheltered facilities are non-profit corporations excess revenue cannot be termed "profit."

functioning developmentally disabled persons do not acquire tasks as rapidly as higher functioning persons in tradiational sheltered workshops, it is not surprising that these facilities are reluctant to serve these individuals.

In many industrial settings, however, tasks remain comparatively uniform, are usually mechanized, and are designed to eliminate worker judgements and fatigue. Thus it may be that while the social environment of competitive industry might be more complex than sheltered settings the work tasks in sheltered settings may require more judgements.

In a sheltered enclave the more complex social environment of the industrial setting is modified by the presence of a highly trained supervisor. The industrial tasks, remaining relatively uniform over time, can be taught by systematic means even to very low functioning clients.

6. Parsimony

In the next decade many thousands of developmentally disabled citizens who previously would have been institutionalized will remain in the community requiring some level of support to lead a free but guided life. Given the total number of individuals requiring service it is highly unlikely that the nation will have sufficient resources to erect the needed sheltered facilities to serve these individuals. Sheltered industrial enclaves, on the other hand, make use of existing facilities and equipment, thus reducing, to some extent, the need for traditional sheltered facilities.

In addition to the operation of sheltered industrial enclaves within business settings training centers will also be more aggressive in seeking client work in the community capitalizing especially on the growth proper. The research of the Vocational Services Expansion Project has demonstrated that developmentally disabled citizens can be taught the safe use of industrial lawn

care equipment. training centers will secure lawn care contract with condominiums, apartments, and industry. When clients are not engaged in complex subcontract work within the training center, they may be rotated through the center's industrial enclave or assigned to the lawn maintenance operators. By maintaining a diversified portfolio of highly structured and supervised work opportunities the future training center will be able to offer clients more steady, more remunerative, and more normalizing employment.

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